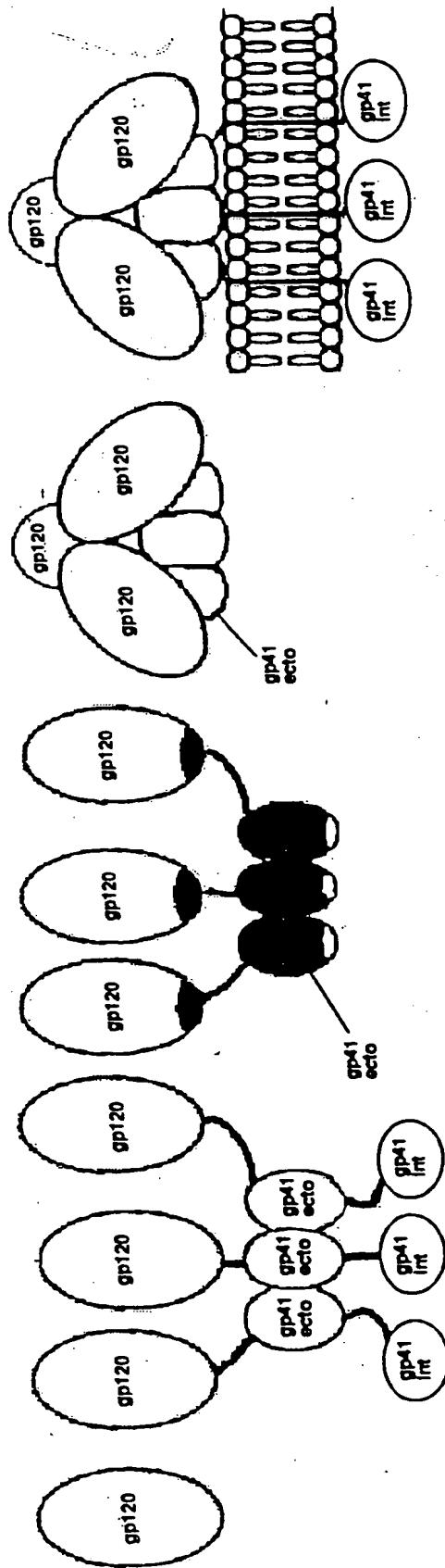


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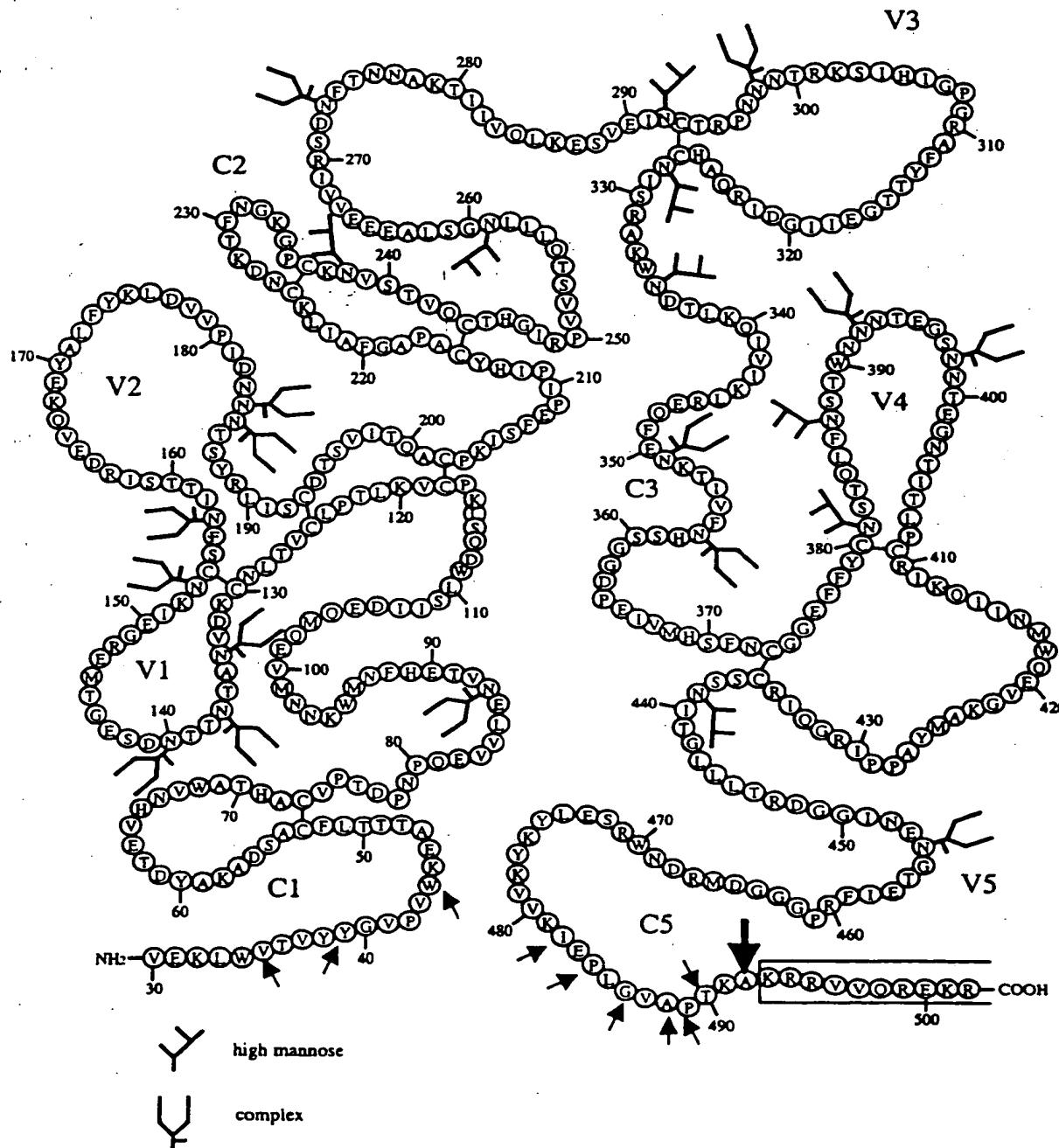
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4
3
2
1
148
129

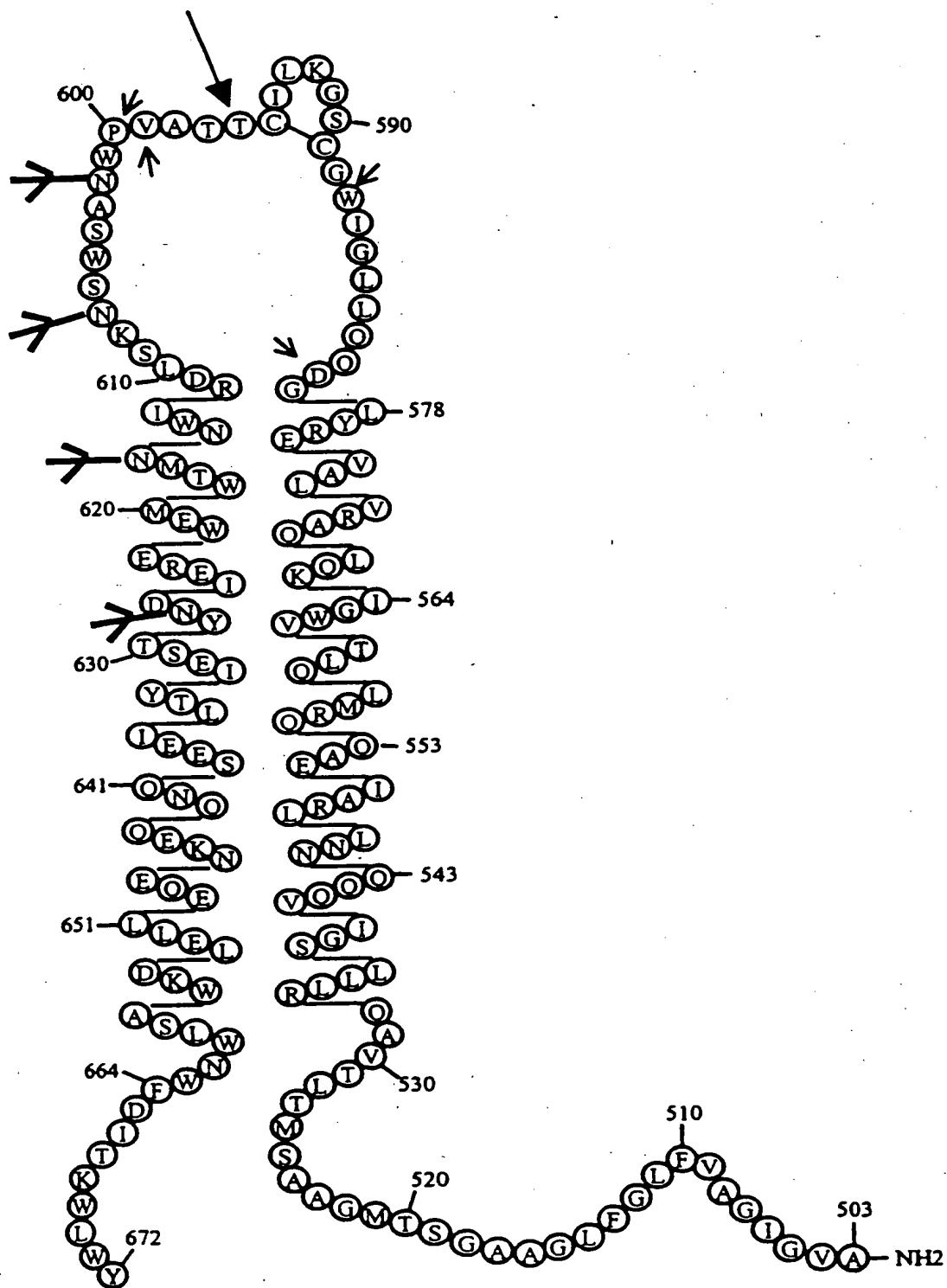
FIGURE 2

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FIGURE 3A



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FIGURE 3B

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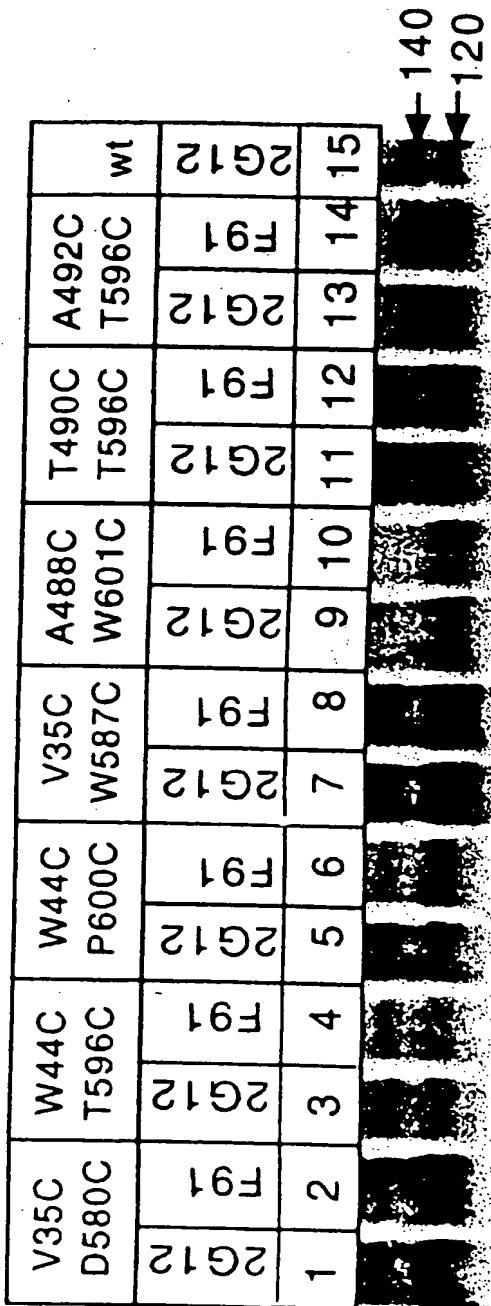


FIGURE 4

FIGURE 5

gp41

| | D580C | W587C | T596C | V599C | P600C | W601C |
|------|-------|-------|-------|-------|-------|-------|
| V35C | 0.45 | 0.40 | 0.35 | 0.30 | 0.40 | 0.30 |
| Y39C | 0.35 | 0.30 | 0.60 | 0.45 | 0.45 | N.D. |
| W44C | 0.45 | 0.45 | 0.65 | 0.50 | 0.65 | 0.45 |

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gp120

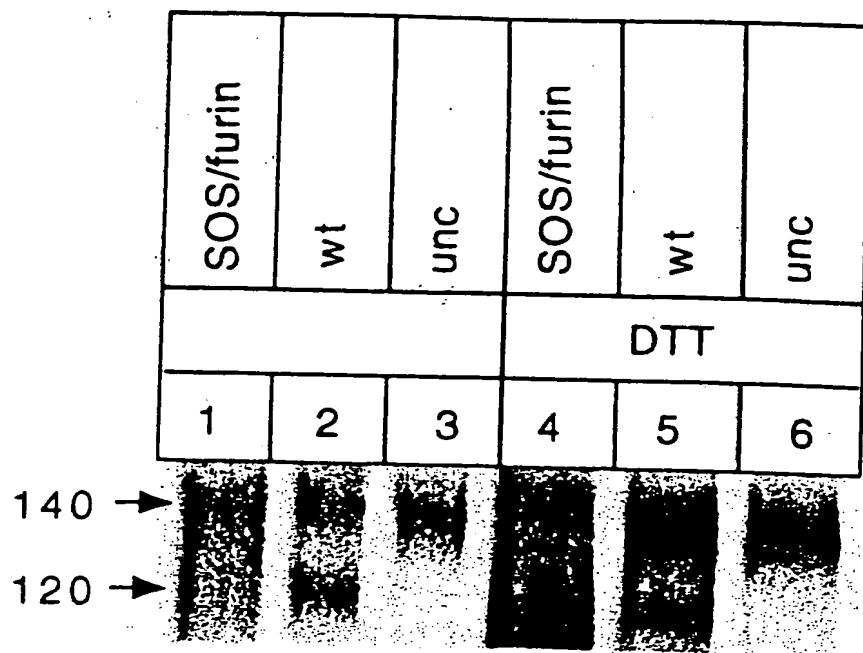
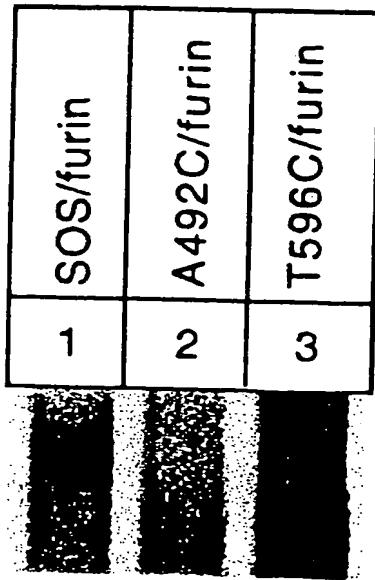
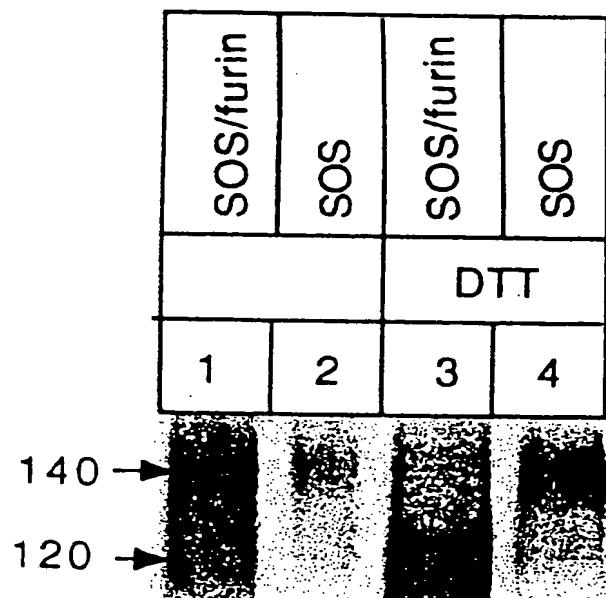
C1

| | P484C | G486C | A488C | P489C | T490C | A492C |
|--|-------|-------|-------|-------|-------|-------|
| | 0.35 | 0 | 0 | 0.10 | 0.15 | 0.05 |
| | | 0.30 | 0.05 | 0.30 | 0.55 | 0.75 |
| | | 0.25 | 0 | 0.15 | 0.25 | 0.50 |
| | | 0.20 | 0 | 0.05 | 0.25 | 0.10 |
| | | 0.30 | 0 | 0.05 | 0.25 | 0.10 |
| | | 0 | 0 | 0 | 0 | 0 |

gp120

C5

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FIGURE 6A**FIGURE 6B****FIGURE 6C**

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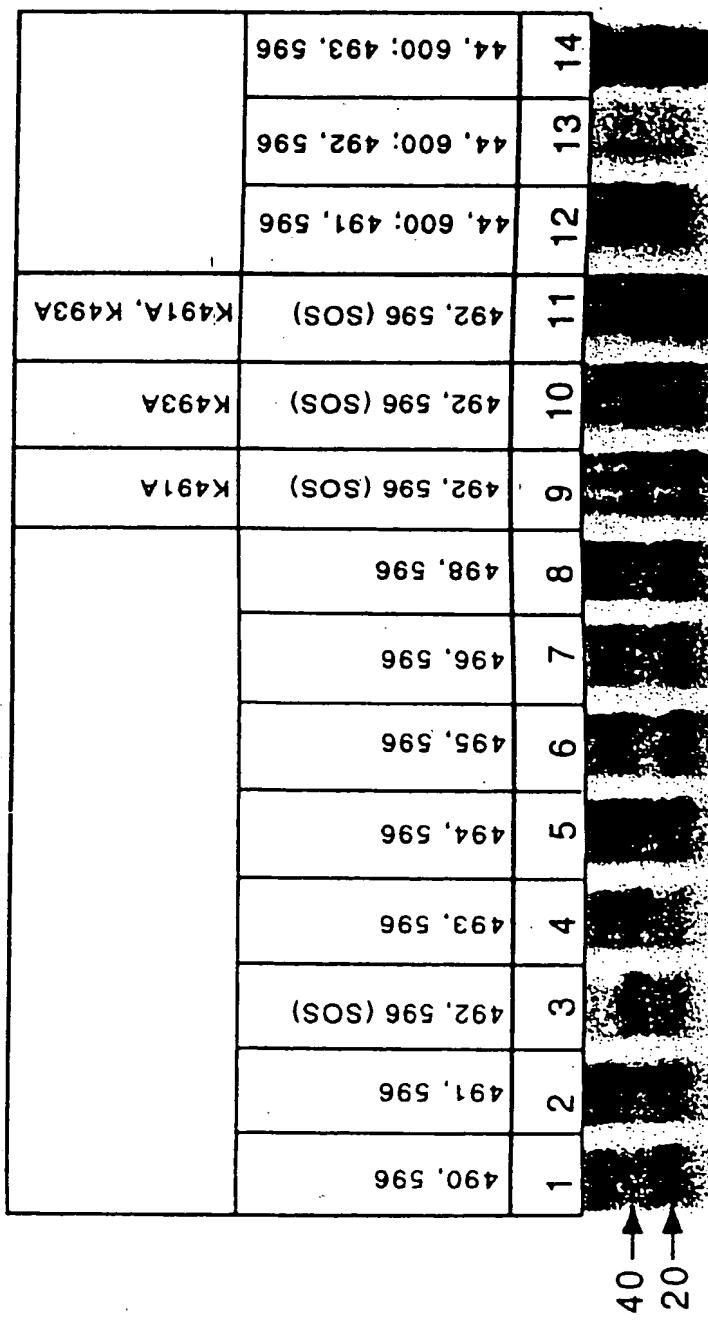
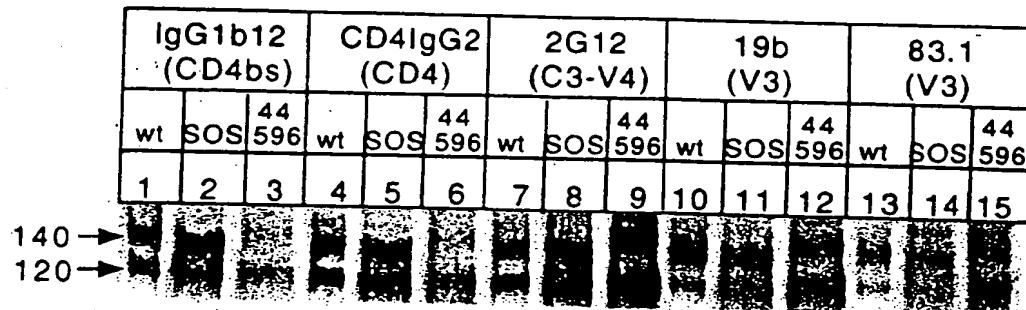
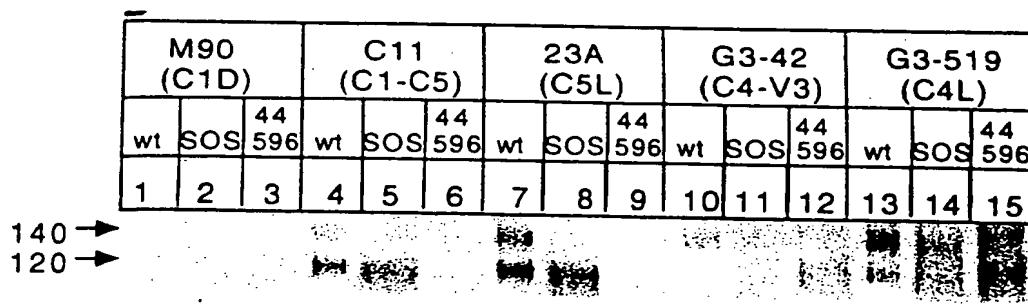
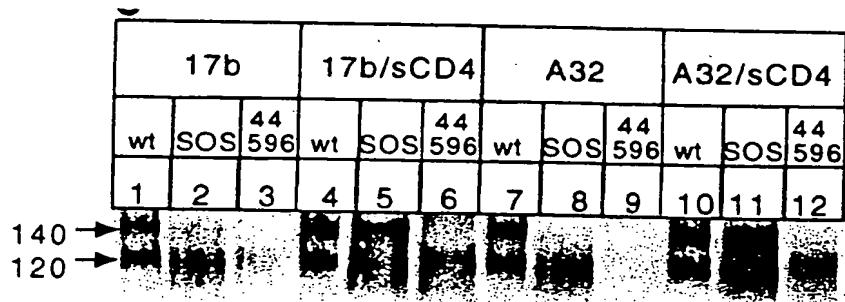


FIGURE 7

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FIGURE 8A**FIGURE 8B****FIGURE 8C**

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FIGURE 8D

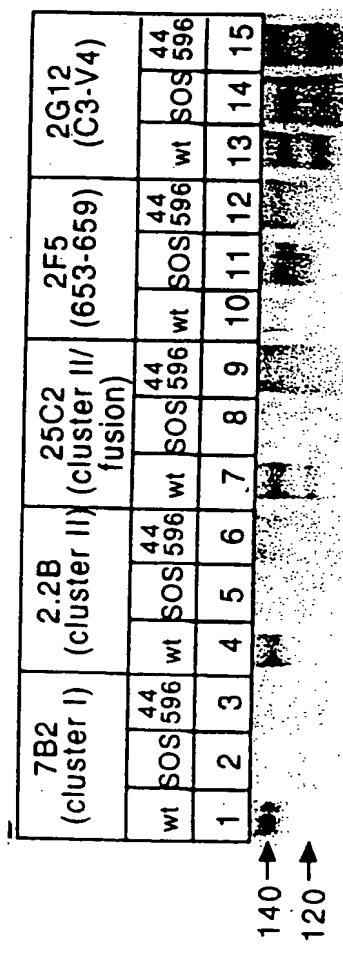
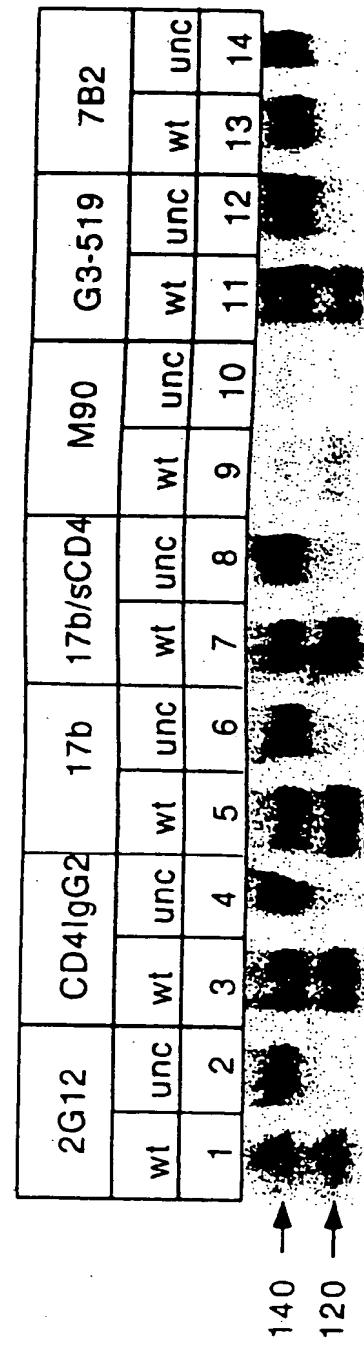


FIGURE 8E



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FIGURE 9A

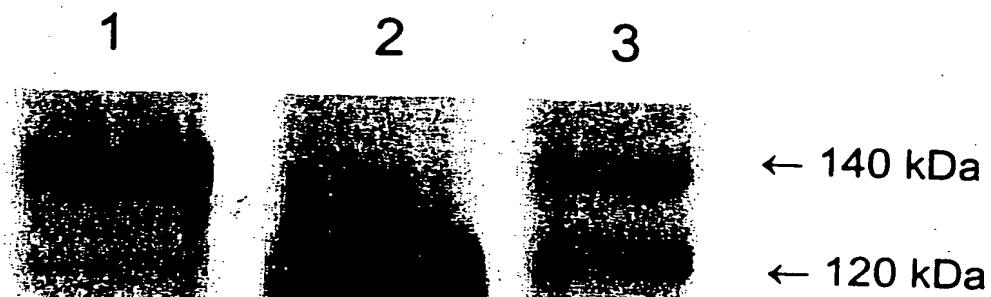
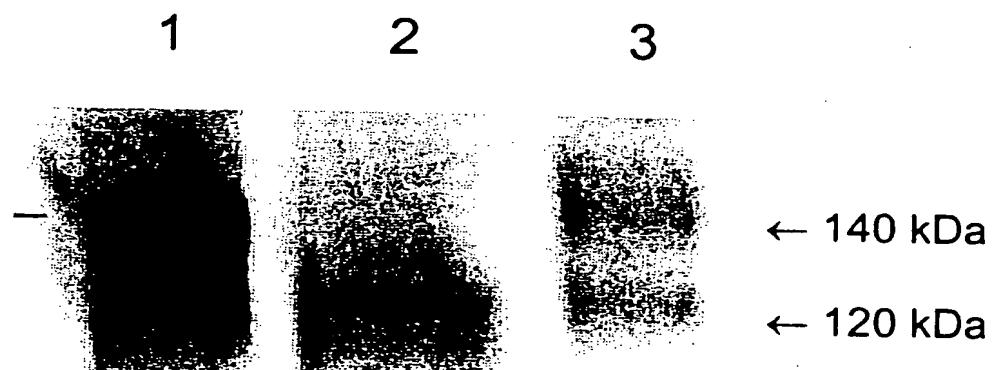
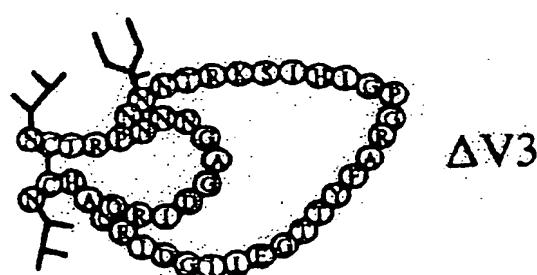
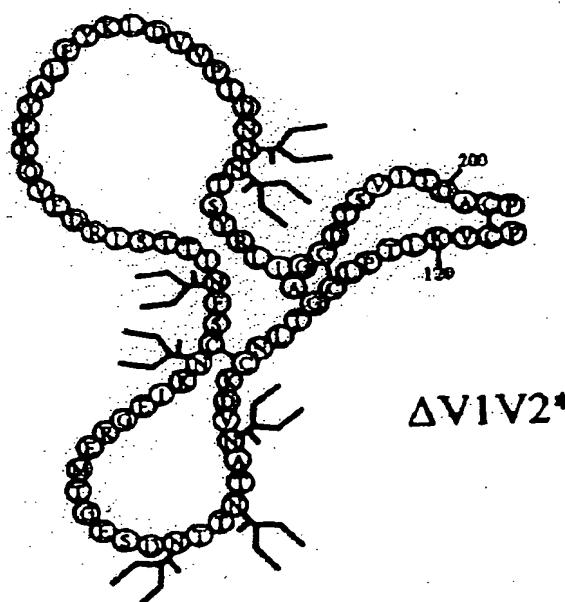
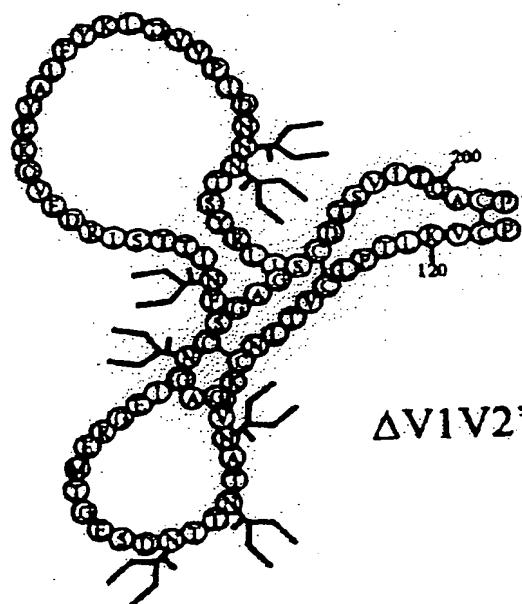
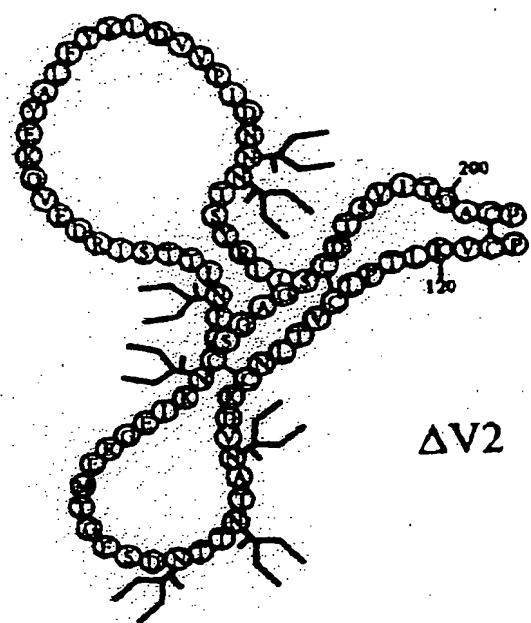
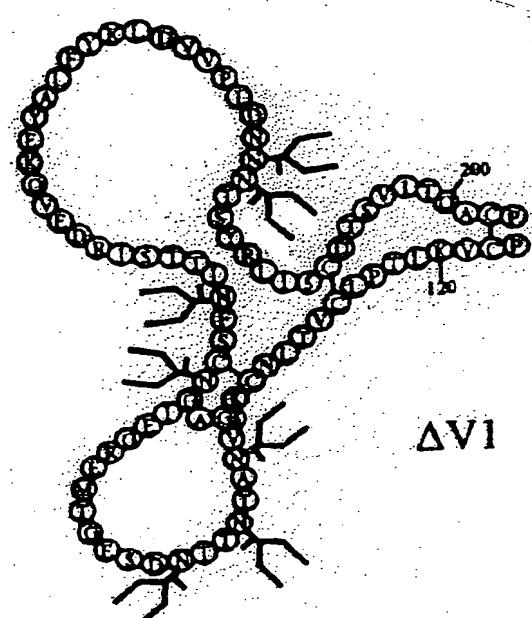


FIGURE 9B



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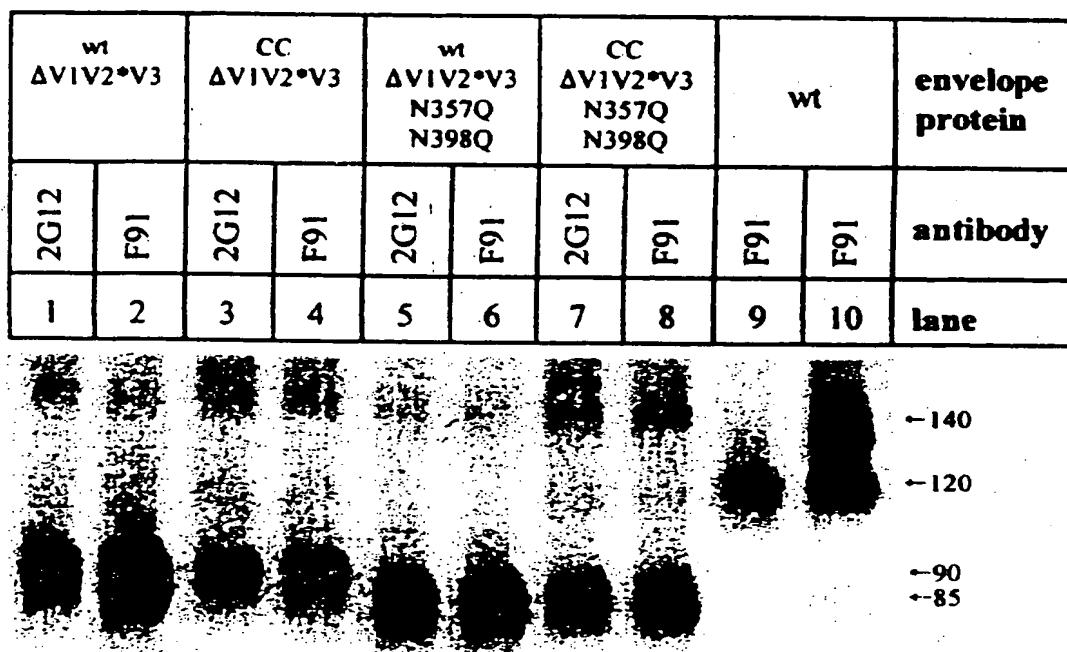
FIGURE 10



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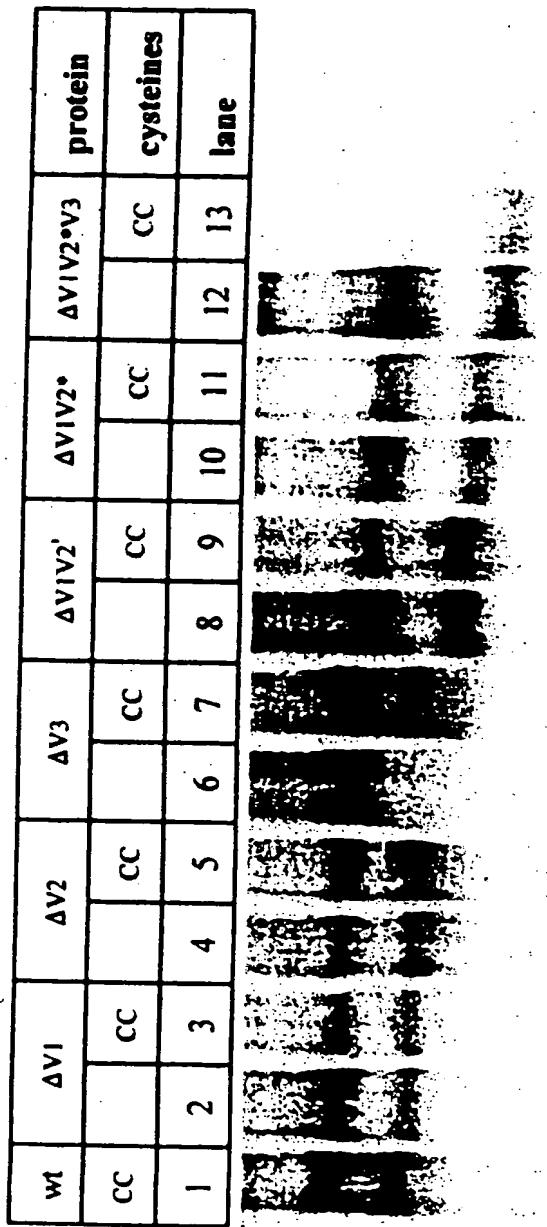
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FIGURE 11A



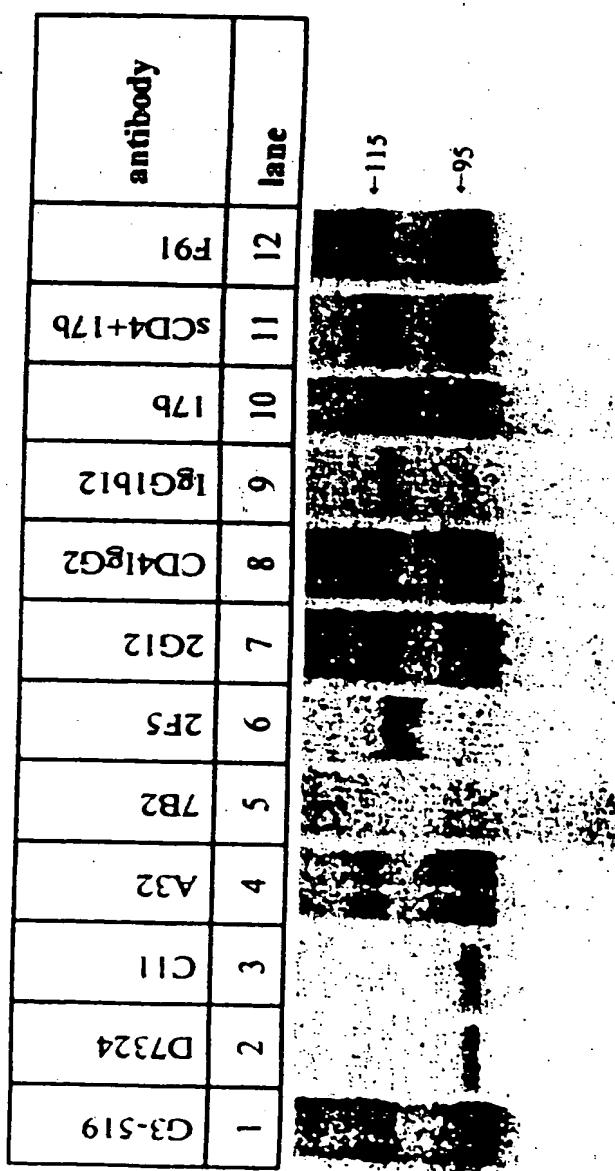
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FIGURE 11B



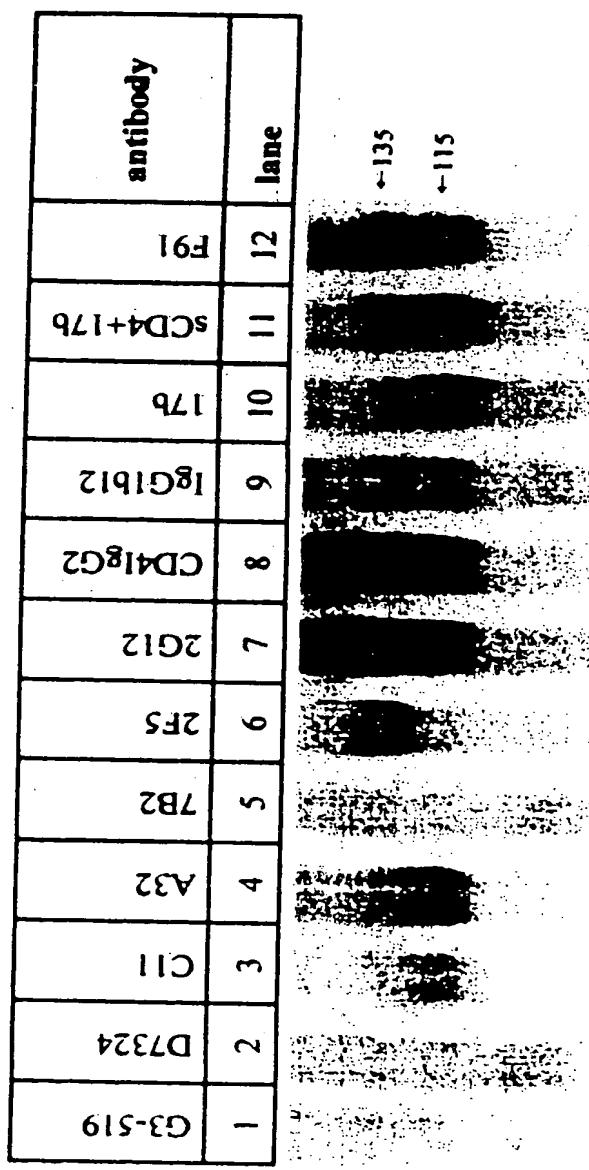
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FIGURE 12A



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FIGURE 12B



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FIGURE 13AHIV-1_{JR-FL} SOS gp140

(a)

1 GTAGAAAAGTTGTGGGTACAGTCTATTATGGGGTACCTGTGTGGAAAGA
 51 AGCAACCACCACTCTATTGTGCATCAGATGCTAAAGCATATGATACAG
 101 AGGTACATAATGTTGGGCCACACATGCCTGTGTACCCACAGACCCCAAC
 151 CCACAAGAAGTAGTATTGGAAAATGTAACAGAACATTAAACATGTGGAA
 201 AAATAACATGGTAGAACAGATGCAGGAGGATATAATCAGTTATGGGATC
 251 AAAGCCTAAAGCCATGTGTAAAATTAAACCCACTCTGTGTTACTTTAAAT
 301 TGCAAGGATGTGAATGCTACTAATACCACTAATGATAGCGAGGGAACGAT
 351 GGAGAGAGGAGAAATAAAAAACTGCTCTTCAATATCACCAACGATAA
 401 GAGATGAGGTGCAGAAAGAATATGCTTTTATAAAACTTGATGTAGTA
 451 CCAATAGATAATAATAATACCACTATAGGTTGATAAGTTGTGACACCTC
 501 AGTCATTACACAGGCCGTGCTAAAGATATCCTTGAGCCAATTCCCATAC
 551 ATTATTGTGCCCGGCTGGTTTGCATTCTAAAGTGTATGATAAGACG
 601 TTCAATGGAAAAGGACCATGTAAAAATGTCAAGCACAGTACAATGTACACA
 651 TGGAAATTAGGCCAGTAGTATCAACTCAACTGCTGCTAAATGGCAGTCTAG
 701 CAGAAGAAGAGGTAGTAATTAGATCTGACAATTTCACGAACAATGCTAA
 751 ACCATAATAGTACAGCTGAAAGAATCTGTAGAAATTAAATTGTACAAGACC
 801 CAACACAATACAAGAAAAAGTATACATATAGGACCAGGGAGAGCATT
 851 ATACTACAGGAGAAATAATAGGAGATATAAGACAAGCACATTGTAAACATT
 901 AGTAGAGCAAAATGGAATGACACTTTAAAACAGATAGTTATAAAATTAAAG
 951 AGAACAAATTGAGAATAAAACAATAGTCTTAATCACTCCTCAGGAGGGGG
 1001 ACCCAGAAATTGTAATGCACAGTTTAAATTGTGAAGGGAGAATT
 1051 TGTAATTCAACACAACTGTTAATAGTACTTGGAAATAATAACTGAAGG
 1101 GTCAAATAACACTGAAGGAAATACTATCACACTCCATGCAGAATAAAAC
 1151 AAATTATAAACATGTGGCAGGAAGTAGGAAAGCAATGTATGCCCTCCC
 1201 ATCAGAGGACAAATTAGATGTTCATCAAATATTACAGGGCTGCTATTAAAC
 1251 AAGAGATGGTGGTATTAAATGAGAATGGGACCGAGATCTCAGACCTGGAG
 1301 GAGGAGATATGAGGGACAATTGGAGAAGTGAATTCTATAAAATATAAGTA
 1351 GTAAAAATTGAACCATTAGGAGTAGCACCCACCAAGTGCAGAGAAGAGT
 1401 GGTGCAAAGAGAAAAAGAGCAGTGGGAATAGGAGCTGTGTTCTGGGT
 1451 TCTTGGGAGCAGCAGGAAGCACTATGGCGCAGCGTCAATGACACTGACG
 1501 GTACAGGCCAGACTATTATTGTCTGGTATAGTGCACAGCAGAACATT
 1551 GCTGAGGGCTATTGAGGCAGCAACAGCGTATGTTGCAACTCACAGTCTGGG
 1601 GCATCAAGCAGCTCCAGGCAAGAGTCCTGGCTGTGGAAAGATACCTAGGG
 1651 GATCAACAGCTCCTGGGGATTGGGGTTGCTCTGGAAAACCTATTGCTG
 1701 CACTGCTGTGCCTTGGAAATGCTAGTTGGAGTAATAATCTCTAGATAGGA
 1751 TTTGGAATAACATGACCTGGATGGAGTGGAAAGAGAAATTGACAATTAC
 1801 ACAAGCGAAATATACACACTAATTGAAGAACGACAAACAAGAAAA
 1851 GAATGAACAAGAATTATTGGAATTAGATAAATGGCAAGTTGTGGAATT
 1901 GGTTGACATAACAAACTGGCTGTGGTAT

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FIGURE 13B

| | | | | | |
|-----|-------------|---------------------|------------|---------------------|-------------|
| 30 | VEKLVWVTVYY | GVPVWKEATT | TLFCASDAKA | YDTEVHNWVA | THACVPTDPN |
| 80 | PQEVVLENVT | EHFNMWKNNM | VEQMEDIIS | LWDQSLKPCV | KLTPLCVTLN |
| 130 | CKDVNATNTT | NDSEGTMERG | EIKNCSFNIT | TSIRDEVQKE | YALFYKLDVV |
| 180 | PIDNNNTSYR | LISCDTSVIT | QACPKISFEP | IPIHYCAPAG | FAILKCNDKT |
| 230 | FNGKGPCKNV | STVQCTHGIS | PVVSTQLLN | GSLAEEEVVI | RSDNFTNNAK |
| 280 | TIIVQLKESV | EINCTRPNNN | TRKSIHIGPG | RAFYTTGEII | GDIRQAHCHNI |
| 330 | SRAKWNDTLK | QIVIKLREQF | ENKTIVFNHS | SGGDPEIVMH | SFNCEGEFFY |
| 380 | CNSTSQLFNST | WNNNTEGSNN | TEGNTITLPC | RIKQIINMWQ | EVGKAMYAPP |
| 430 | IRGQIRCSSN | ITGLLLTRDG | GINENGTEIF | RPGGGDMRDN | WRSEFYKYKV |
| 480 | VKIEPLGVAP | TK <u>CK</u> RRVVQR | EKRAVGIGAV | FLGFLGAAGS | TMGAASMTLT |
| 530 | VQARLLSGI | VQQQNLLRA | TEAQORMLQL | TW <u>WG</u> IKQLQA | RVLAVERYLG |
| 580 | DQQLLGIWGC | SGKLI <u>C</u> TAV | PWNASWSNKS | LDRIWNMTW | MEWEREIDNY |
| 630 | TSEIYTLEE | SONQQEKNEQ | ELLELDKwas | LWNWEDITNW | LWY |

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FIGURE 14A**HIV-1_{JR-FL} ΔV1V2* SOS gp140**

(a)

1 GTAGAAAAGTTGTGGGTACAGTCTATTATGGGGTACCTGTGTGGAAAGA
 51 AGCAACCACCACTCTATTTGTGCATCAGATGCTAAAGCATATGATACAG
 101 AGGTACATAATGTTGGGCCACACATGCCTGTACCCACAGACCCCAAC
 151 CCACAAGAAGTAGTATTGGAAAATGTAACAGAACATTAAACATGTGGAA
 201 AAATAACATGGTAGAACAGATGCAGGAGGATAATCAGTTATGGGATC
 251 AAAGCCTAAAGCCATGTGTAAGGAACTTAAACCCACTCTGTGGTGCAGGATGT
 301 GACACCTCAGTCATTACACAGGCCTGTCAAAGATATCCTTGAGCCAAT
 351 TCCCATACTATTGTGCCCGGCTGGTTGCGATTCTAAAGTGTAAATG
 401 ATAAGACGTTCAATGGAAAAGGACCATGTAAGGAACTGTCAAGTACAA
 451 TGTACACATGGAATTAGGCCAGTAGTATCAACTCAACTGCTGCTAAATGG
 501 CAGTCTAGCAGAAGAAGAGGTAGTAATTAGATCTGACAATTACAGCAACA
 551 ATGCTAAAACCATAATAGTACAGCTGAAAGAATCTGTAGAAATTAAATTGT
 601 ACAAGACCCAAACAACAATACAAGAAAAAGTATACATATAGGACCAGGGAG
 651 AGCATTAACTACAGGAGAAATAATAGGAGATATAAGACAAGCACATT
 701 GTAACATTAGTAGAGCAAAATGGAATGACACTTAAACAGATAGTTATA
 751 AAATTAAAGAGAACAAATTGAGAATAAAACAATAGTCTTAATCACTCCTC
 801 AGGAGGGGACCCAGAAATTGTAATGCACAGTTAATTGTGGAGGAGAAT
 851 TTTCTACTGTAATTCAACACAACTGTTAATAGTACTTGAATAATAAT
 901 ACTGAAGGGTCAAATAACACTGAAGGAAATACTATCACACTCCATGCAG
 951 AATAAAACAAATTATAACATGTGGCAGGAAGTAGGAAAGCAATGTATG
 1001 CCCCTCCCCTCAGAGGACAAATTAGATGTTCATCAAATATTACAGGGCTG
 1051 CTATTAAACAAGAGATGGTGGTATTAATGAGAATGGGACCGAGATCTCAG
 1101 ACCTGGAGGAGGAGATATGAGGGACAATTGGAGAAGTGAATTATAAAAT
 1151 ATAAAGTAGTAAAATTGAACCATTAGGAGTAGCACCCACCAAGTGAAG
 1201 AGAAGAGTGGTGCAGAACAGAGAAAAAGAGCAGTGGGAATAGGAGCTGTGTT
 1251 CCTTGGGTTCTTGGGAGCAGCAGGAAGCAGTATGGCGCAGCGTCAATGA
 1301 CACTGACGGTACAGGCCAGACTATTATTGCTGTGTTAGTGCACAGCAG
 1351 AACAAATTGCTGAGGGCTATTGAGGCAGAACAGCGTATGTTGCAACTCAC
 1401 AGTCTGGGCATCAAGCAGCTCCAGGCAAGAGTCTGGCTGTGGAAAGAT
 1451 ACCTAGGGGATCAACAGCTCTGGGATTTGGGTTGCTCTGGAAAACCTC
 1501 ATTTGCTGCACTGCTGTGCCTTGGAAATGCTAGTTGGAGTAATAAATCTCT
 1551 GGATAGGATTGGAATAACATGACCTGGATGGAGTGGAGAAGAGAAATTG
 1601 ACAATTACACAAGCGAAATATAACCCCTAATTGAAGAATCGCAGAACCAA
 1651 CAAGAAAAGAATGAACAAGAATTATTGGAAATTAGATAAAATGGCAAGTT
 1701 GTGGAATTGGTTGACATAACAAACTGGCTGTGGTAT

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FIGURE 14B

(b)

30 VEKLIWVTVYY GVPVWKEATT TLFCASDAKA YDTEVHNWVA THACVPTDPN
 80 PQEVVLENVT EHFNMWKNNM VEQMOEDIIS LWDQSLKPCV KLTPLCCAGC
 130 DTSVITQACP KISFEPPIH YCAPAGFAIL KCNDKTFMNGK GPCKNVSTVQ
 180 CTHGIRPVVS TQILLNGSLA EEEVVIRSDN FTNNNAKTIIV QLKESVEINC
 230 TRPNNNTRKS IHIGPGRAY TTGEIIIGDIR QAHCNISRRAK WNDTLKQIVI
 280 KLREQFENKT IVFNHSSGGD PEIVMHSFNC GGEFFYCNST QLFNSTWNNN
 330 TEGSNNTGEN TITLPCRKIQ IINMMWQEVGK AMYAPPIRGQ IRCSSNITGL
 380 LLTRDGGINE NGTEIERPFG GDMRDNWRSE LYKYKVVKIE PLGVAPTKCK
 430 RRVVQREKRA VGIIGAVFLGF LGAAGSTMGA ASMTLTVQAR LLLSGIVQQQ
 480 NNLLRAIEAQ QRMLQLTVWG IKQLQARVLA VERYLGDQQL LGIWGCGSKL
 530 ICCTAVPWNA SWSNKSLDRI WNNNMWMEWE REIDNYTSET YTLIEESQNQ
 580 QEKNQELLE LDKWASLWNW FDTNWILWY

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FIGURE 15AHIV-1_{JR-FL} ΔV3 SOS gp140

(a)

1 GTAGAAAAGTTGTGGTCACAGTCTATTATGGGTACCTGTGTGGAAAGA
 51 AGCAACCACCACTCTATTGTGCATCAGATGCTAAAGCATATGATACAG
 101 AGGTACATAATGTTGGGCCACACATGCCTGTGTACCCACAGACCCCAAC
 151 CCACAAGAAGTAGTATTGGAAAATGTAACAGAACATTAAACATGTGGAA
 201 AAATAACATGGTAGAACAGATGCAGGAGGATAATCAGTTATGGGATC
 251 AAAGCCTAAAGCCATGTGTAAAATTAAACCCACTCTGTGTTACTTTAAAT
 301 TGCAAGGATGTGAATGCTACTAATACCAACTATGATAGCGAGGGAACGAT
 351 GGAGAGAGGAGAAATAAAAAGTGCCTTCAATATCACCACAAGCATAA
 401 GAGATGAGGTGCAGAAAGAATATGCTCTTTTATAAAACTTGATGTAGTA
 451 CCNATAGATAATAATACCACTAGTTGATAAGTTGTGACACCTC
 501 AGTCATTACACAGGCCTGTCCAAAGATATCCTTGAGCCAATTCCCATAC
 551 ATTATTGTGCCCGGCTGGTTTGCGATTCTAAAGTGTAAATGATAAGACG
 601 TTCAATGGAAAAGGNCCATGTAAAATGTCAGCACAGTNCAATGTACACA
 651 TGGAAATTAGGCCAGTAGTATCACTCAACTGCTGCTAAATGGCAGTCTAG
 701 CAGAAGAAGAGGTAGTAATTAGATCTGACAATTTCACGAACAATGCTAAA
 751 ACCATAATAGTACAGCTGAAAGAATCTGTAGAAATTAAATTGTACAAGACC
 801 CAACAAACAATGGAGCCGGCGATATAAGACAAGCACATTGTAACATTAGTA
 851 GAGCAAAATGGAATGACACTTAAACAGATAGTTATAAAATTAAAGAGAA
 901 CAATTGAGAATAAAACAATAGTCTTAATCACTCCTCAGGAGGGGACCC
 951 AGAAATTGTAATGCACAGTTAATTGTGGAGGAGAATTTCCTACTGTA
 1001 ATTCAACACAACGTAAATAGTACTTGGAAATAATAACTGAAAGGGTCA
 1051 AATAACACTGAAGGAAATACTATCACACTCCCATGCAGAATAAAACAAAT
 1101 TATAAACATGTGGCAGGAAGTAGGAAAAGCAATGTATGCCCTCCCATCA
 1151 GAGGACAAATTAGATGTTCATCAAATATTACAGGGCTGCTATTAACAAGA
 1201 GATGGTGGTATTAATGAGAATGGGACCGAGATCTCAGACCTGGAGGAGG
 1251 AGATATGAGGGACAATTGGAGAAGTGAATTATAAAATATAAAAGTAGTAA
 1301 AAATTGAACCATTAGGAGTAGCACCCACCAAGTGCAGAGAGAGTGGTG
 1351 CAAAGAGAAAAAGAGCAGTGGGAATAGGAGCTGTGTTCTGGTTCTT
 1401 GGGAGCAGCAGGAAGCACTATGGCGCAGCGTCAATGACACTGACGGTAC
 1451 AGGCCAGACTATTATGTCTGGTATAGTGCACACAGCAGAACATTGCTG
 1501 AGGGCTATTGAGGCAGAACAGCGTATGTTGCAACTCACAGTCTGGGGCAT
 1551 CAAGCAGCTCCAGGCAAGAGTCCTGGCTGTGGAAAGATACCTAGGGGATC
 1601 AACAGCTCCTGGGATTGGGTTGCTCTGGAAAACCTATTGCTGCAC
 1651 GCTGTGCCTTGGAAATGCTAGTTGGAGTAATAAACTCTGGATAGGATTG
 1701 GAATAACATGACCTGGATGGAGTGGAAAGAGAAATTGACAATTACACAA
 1751 GCGAAATATAACCCCTAATTGAAGAACGAGAACAAACAAGAAAAGAAT
 1801 GAACAAAGAATTATTGGAATTAGATAAAATGGCAAGTTGTGGAATTGGTT
 1851 TGACATAACAAATGGCTGTGGTAT

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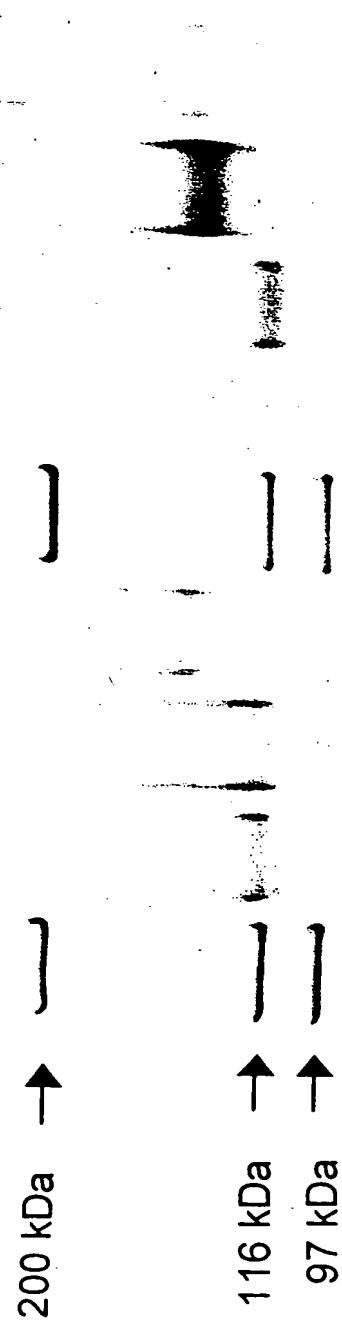
FIGURE 15B

30 VEKLWVTVYY GVPVWKEATT TLEFCASDAKA YDTEVHNWVA THACVPTDPN
 80 PQEVVLENVT EHFNMMWKNM VEQMQEDIIS LWDDQSLKPCV KLTPLCVTLN
 130 CKDVNATNTT NDSEGTMERG EIKNCFSNIT TSIRDEVQKE YALFYKLDVV
 180 XIDNNNNTSYR LISCDTSVIT QACPKISFEP IPIHYCAPAG FAILKCNDKT
 230 FNGKXPCKNV STXQCTHGIR PVVSTQLLN GSLAEEEVVI RSDNFTNNAK
 280 TIVQLKESV EINCTRPNNN GAGDIRQAHC NISRAKWNDT LKQIVVIKLR
 330 QFENKTIVFN HSSGGDPEIV MHSFNCGGEF FYCNSTQLFN STWNNNTEGS
 380 NNTEGNTITL PCRIKQIINM WQEVGKAMYA PPIRGQIRCS SNITGLLLTR
 430 DGGINENGTE IFRPGGGDMR DNWRSELYKY KVVKIEPLGV APTKQKRRVV
 480 QREKRAVGIG AVFLGFLGAA GSTMGAASMT LTVQARILLS GIVQQQNNLL
 530 RAIEAQQRML QLTWVWGIKQL QARVIAVERY LGDQQLLGIW GCSGKLICT
 580 AVPWNASWSN KSLDRIWNM TWMEWEREID NYTSEIYTLL EESQNQQEKN
 630 EQELLELDKW ASLWNWFDT KWLWY

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FIGURE 16

| | | non-reduced | | | | | | | | |
|---------|-----|-------------|-------|-------|-----|------|-------|-------|-----|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| reduced | MW | gp120 | SOS | gp140 | MW | | | | SOS | gp140 |
| | STD | gp140 | gp140 | UNC | STD | none | gp120 | gp140 | UNC | gp140 |



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FIGURE 17A

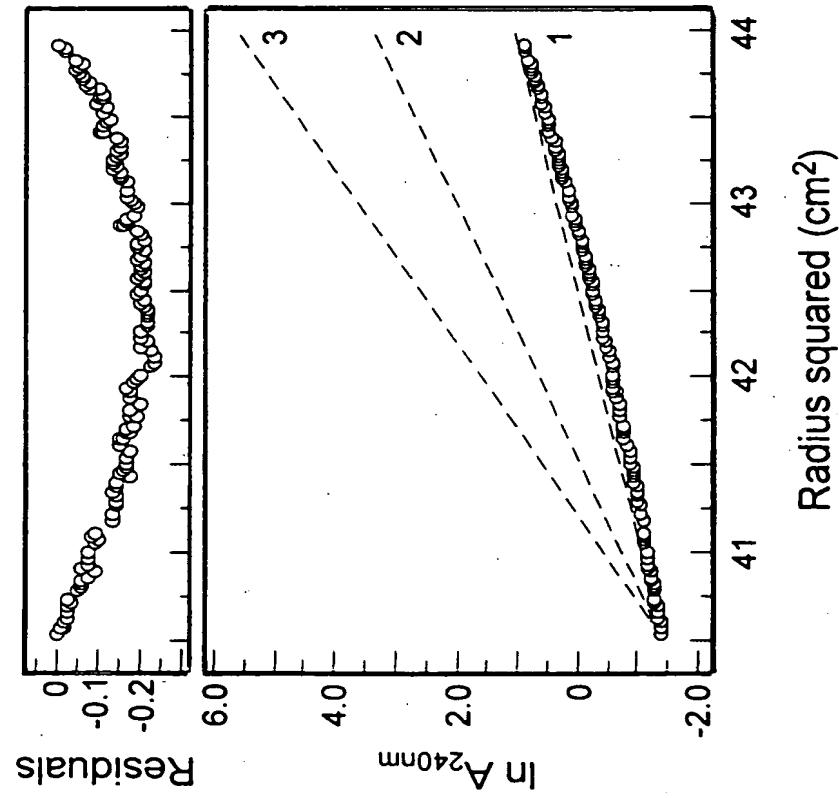
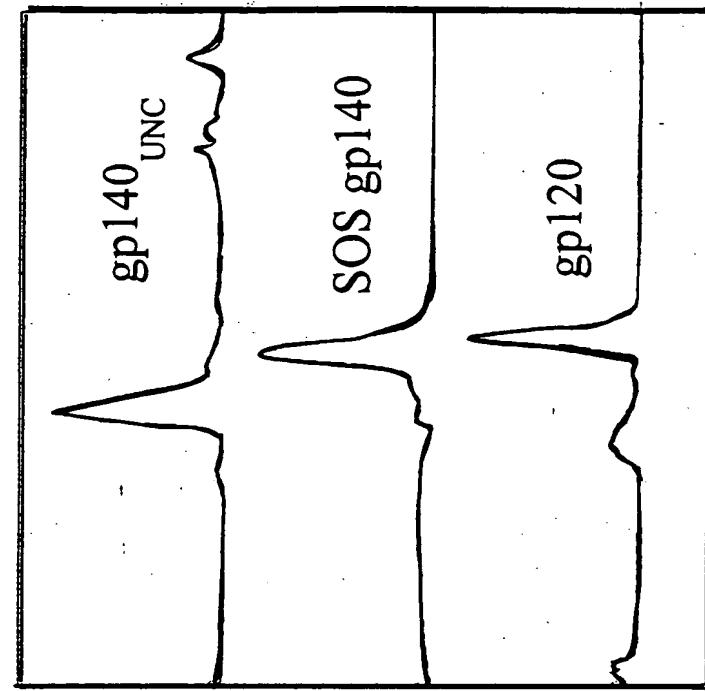
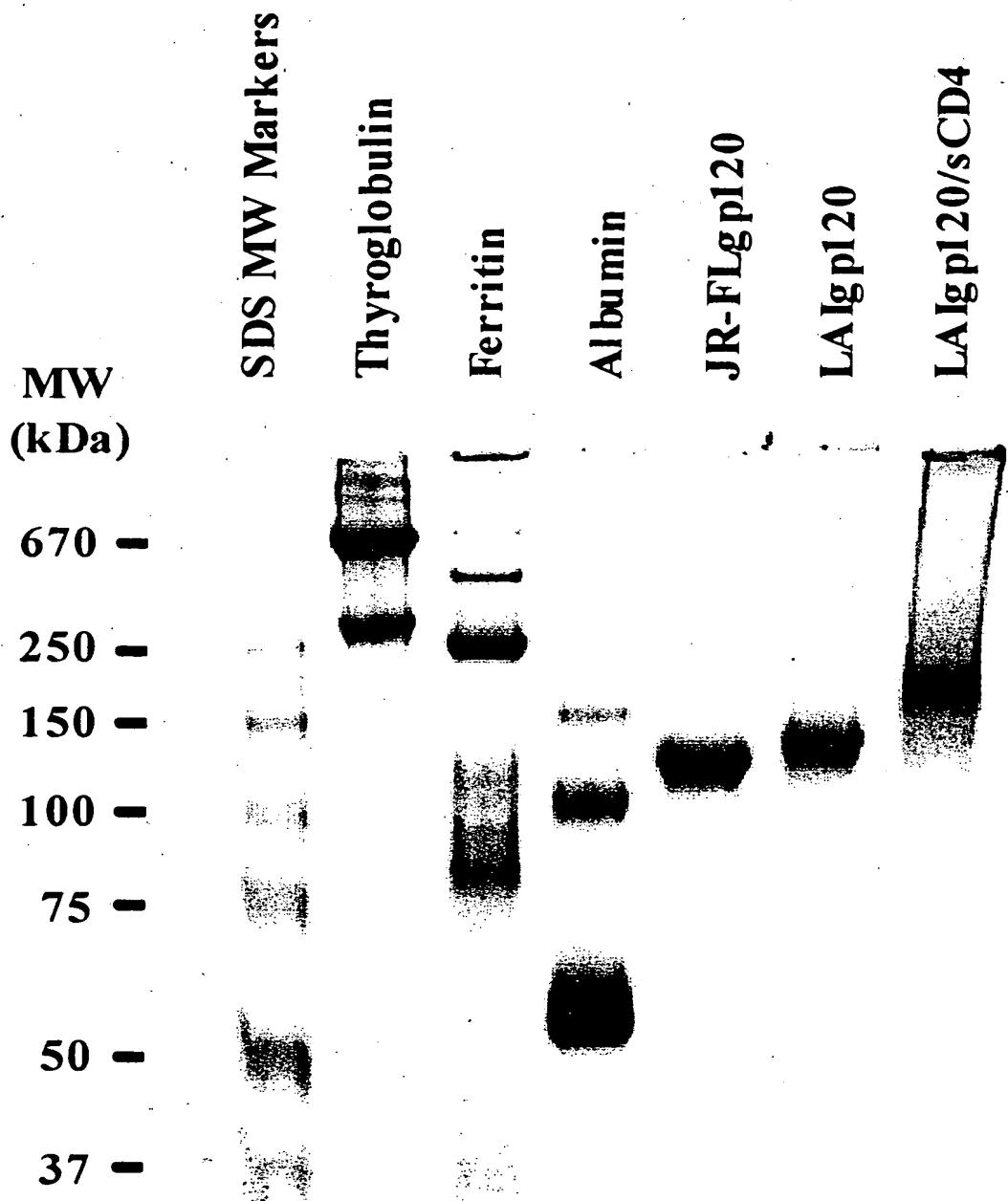


FIGURE 17B

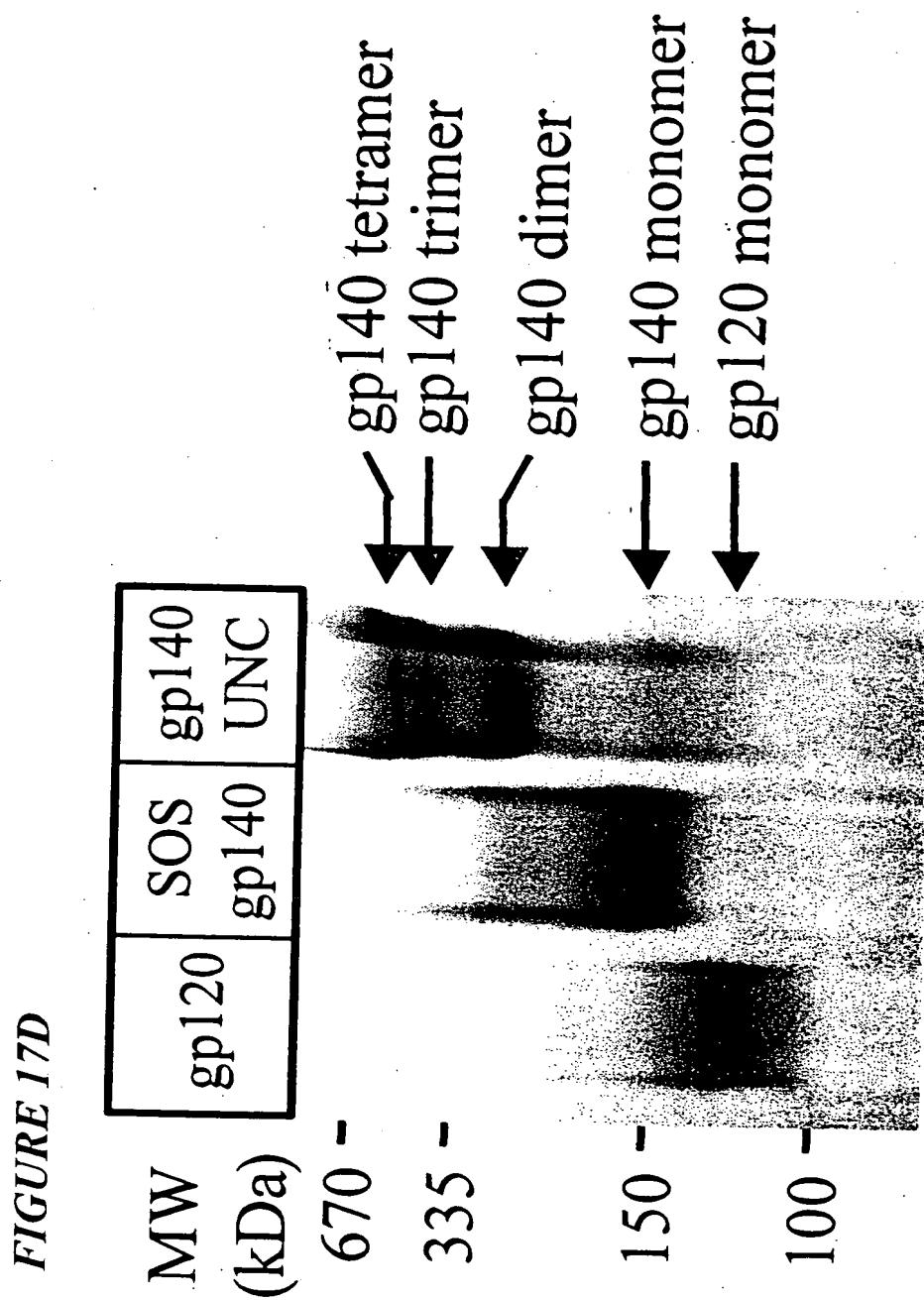


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FIGURE 17C



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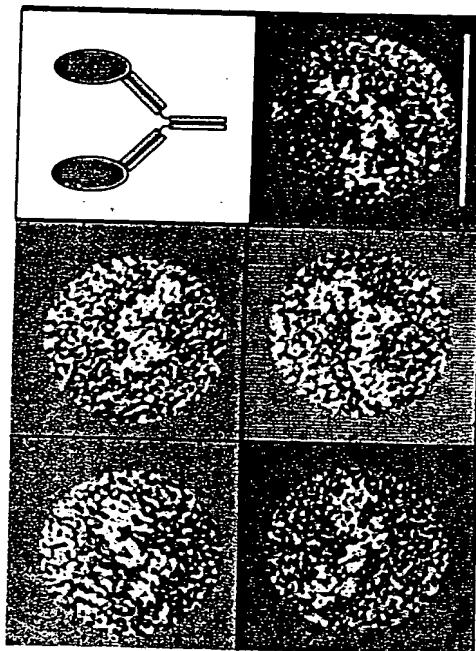


FIGURE 18B

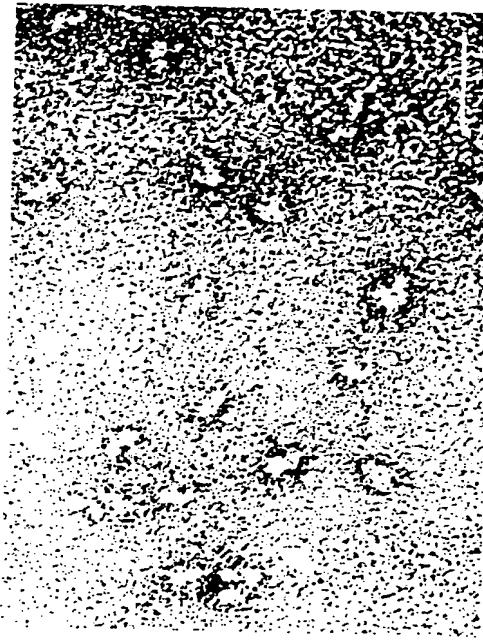


FIGURE 18A

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FIGURE 18D

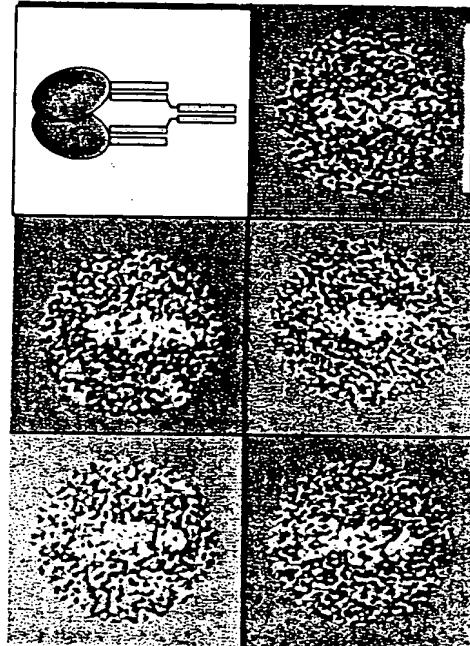
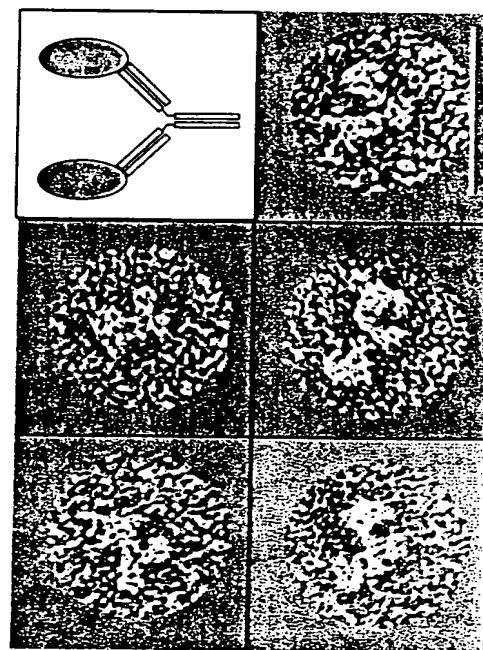


FIGURE 18C



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FIGURE 18F

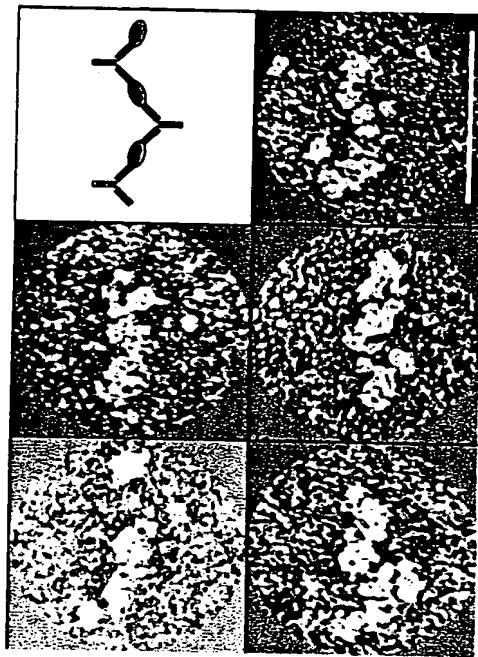
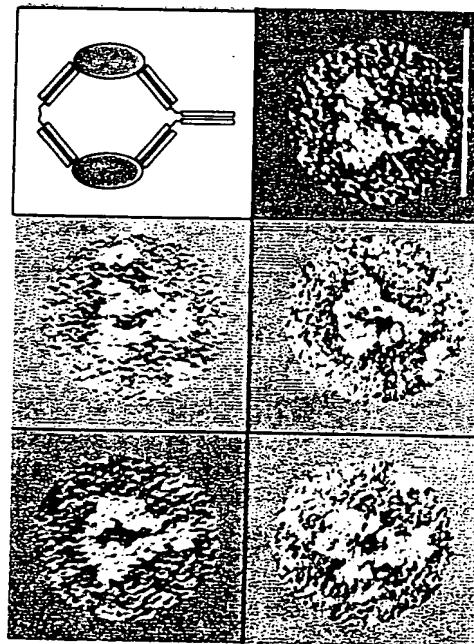


FIGURE 18E



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FIGURE 19A

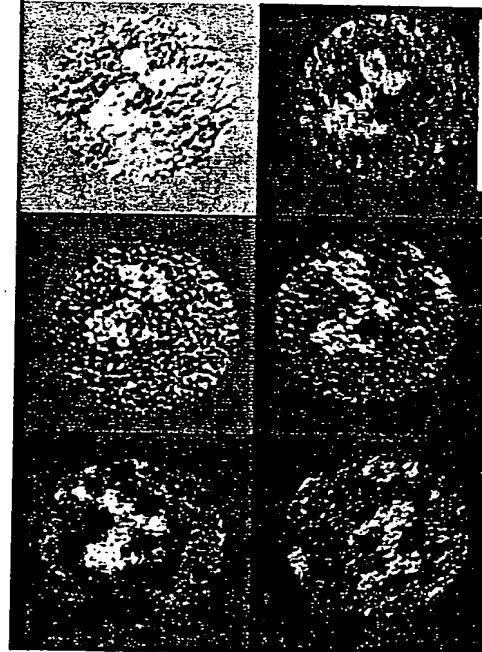
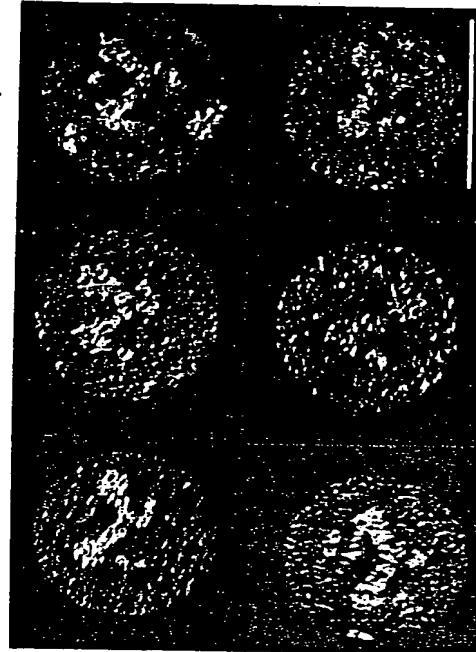


FIGURE 19B



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FIGURE 19C

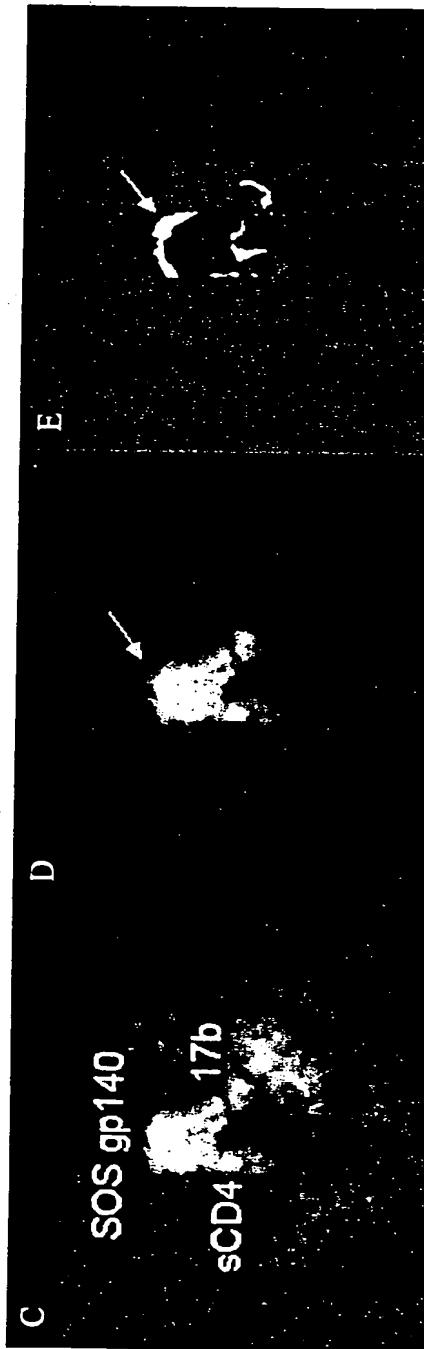


FIGURE 19D

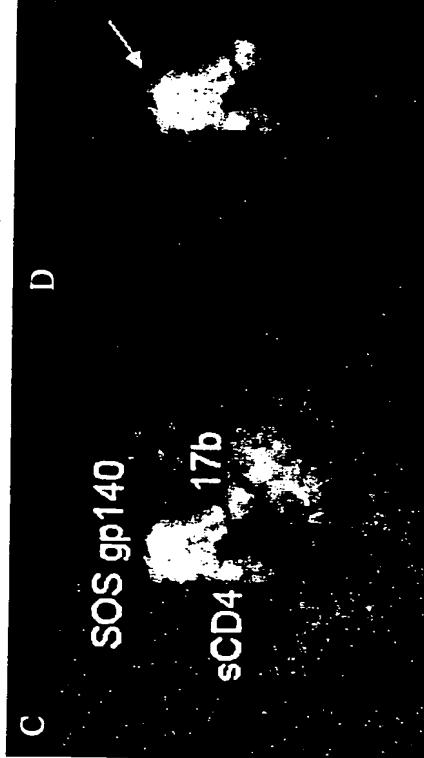
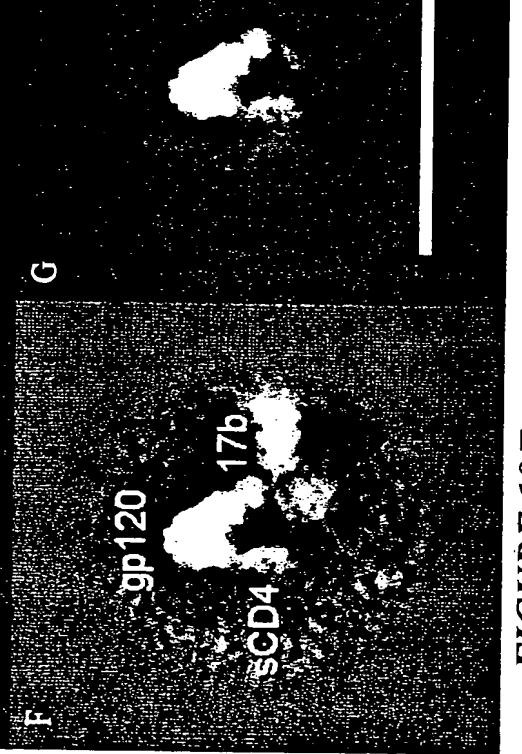
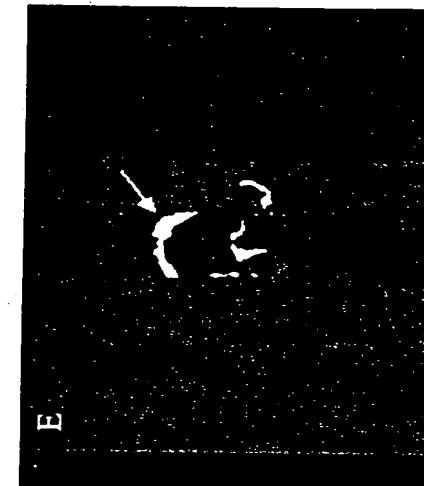


FIGURE 19E



H gp120

G

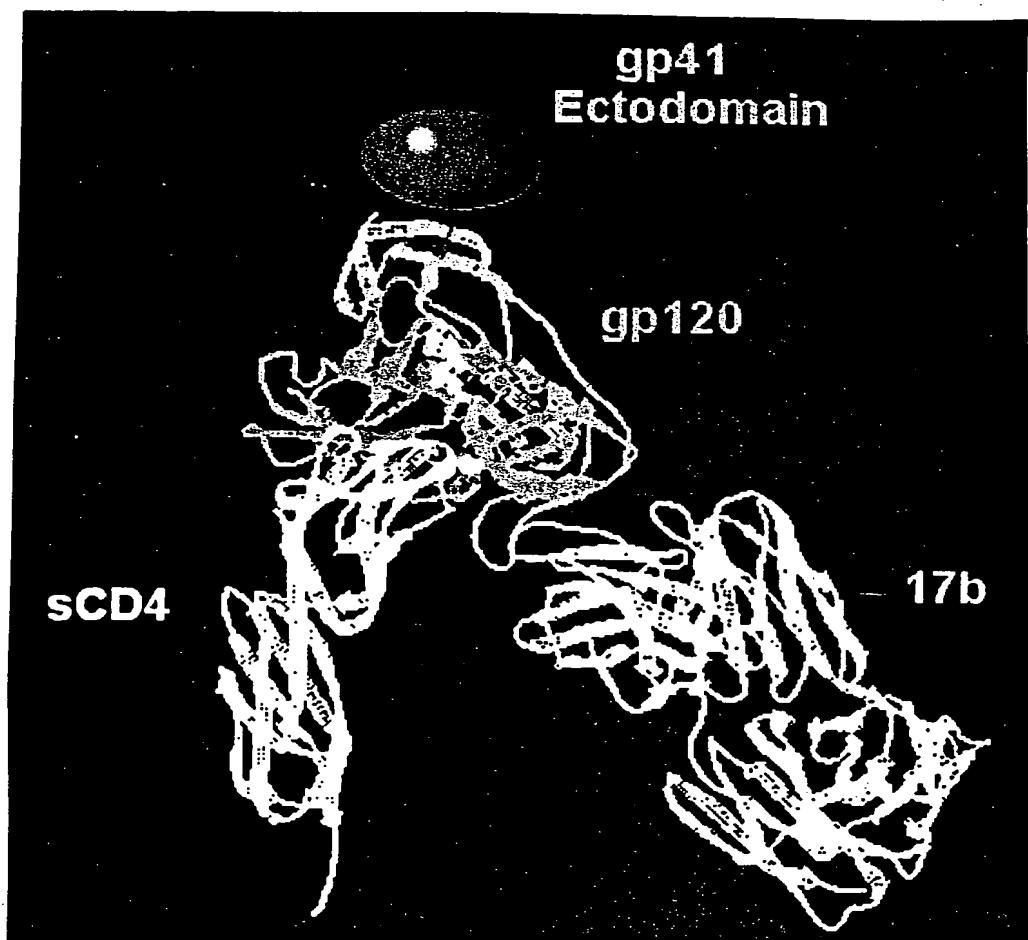
F

FIGURE 19H

FIGURE 19G

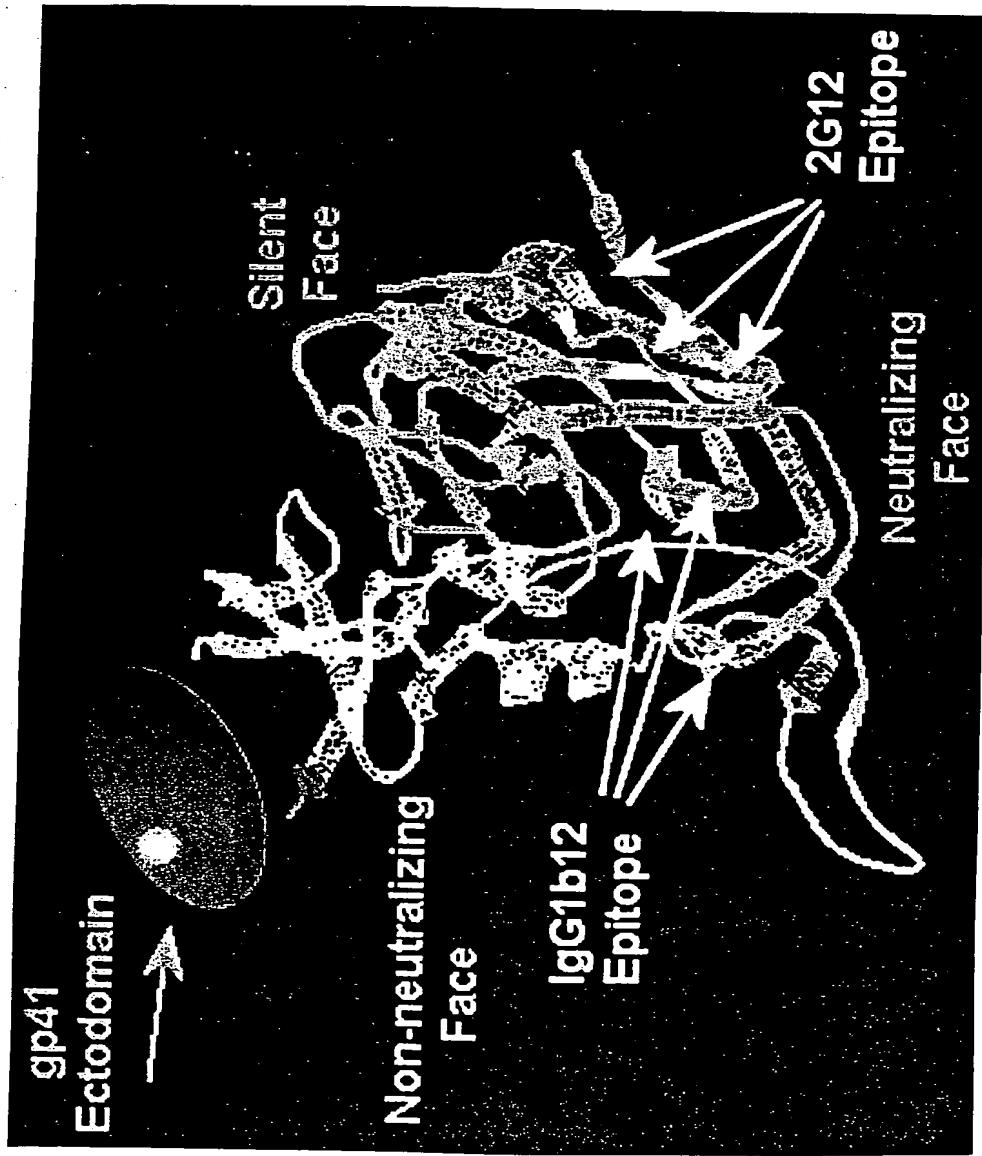
FIGURE 19F

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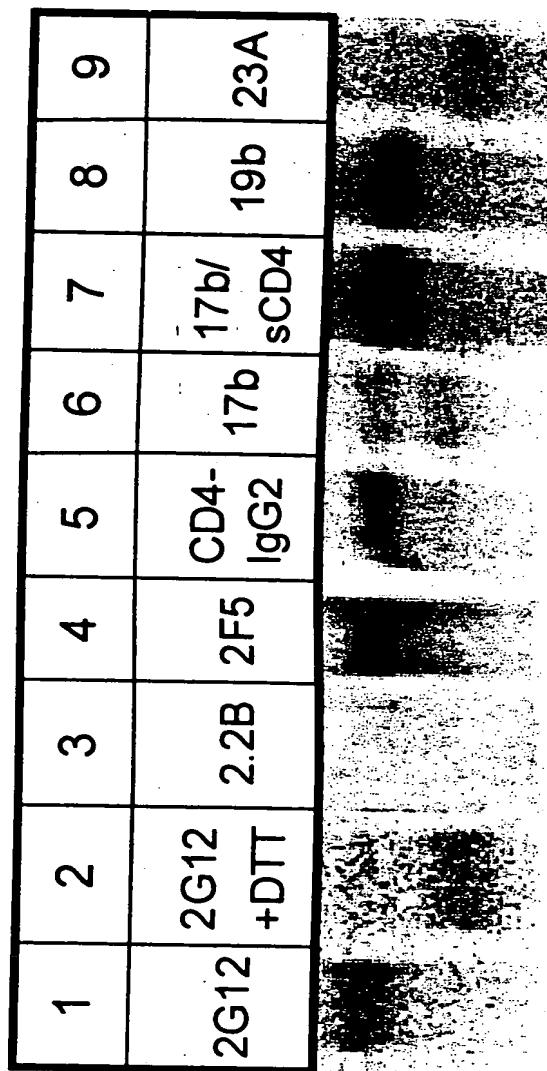
FIGURE 20A

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FIGURE 20B



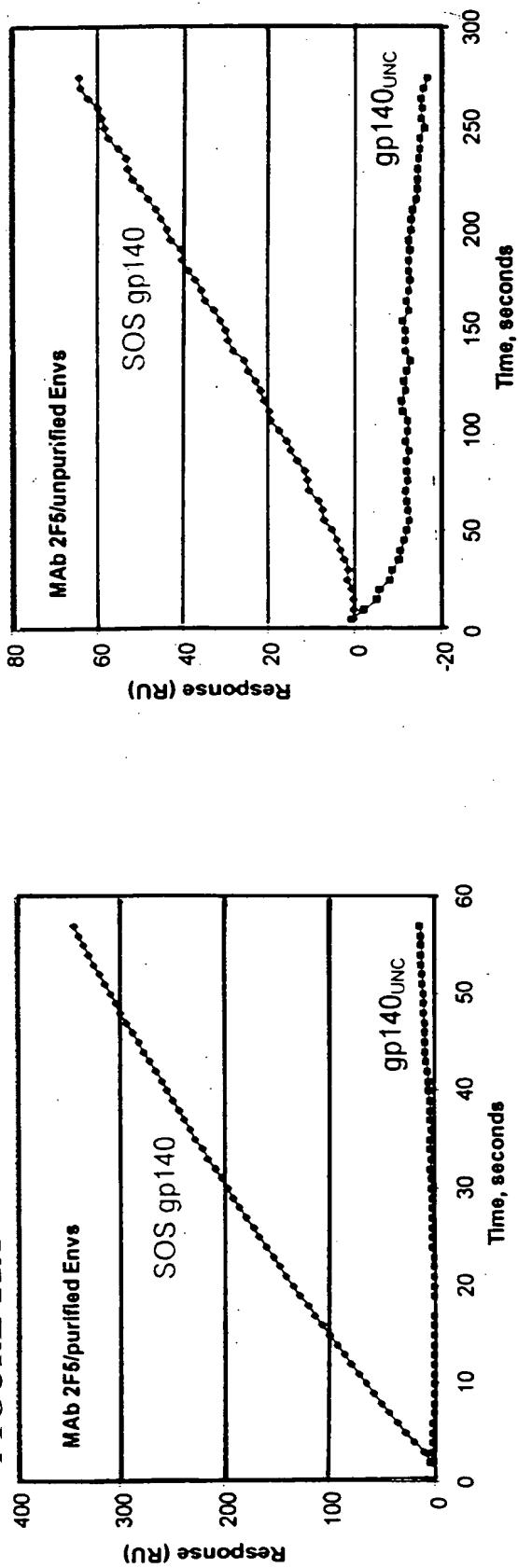
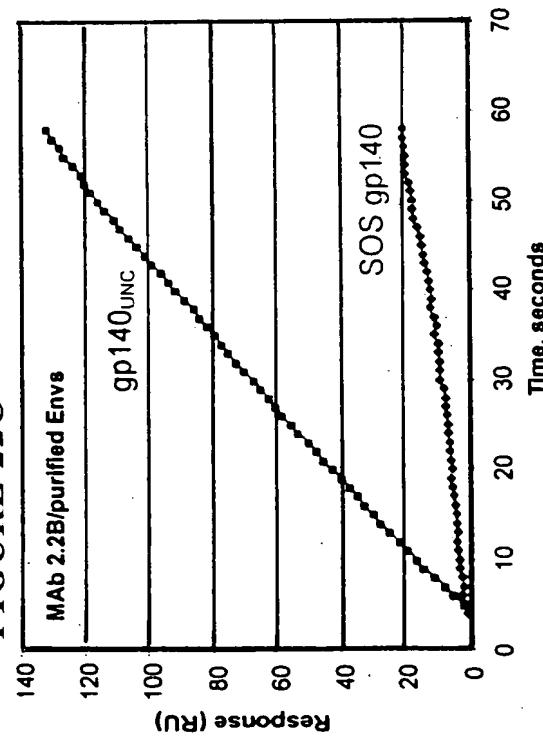
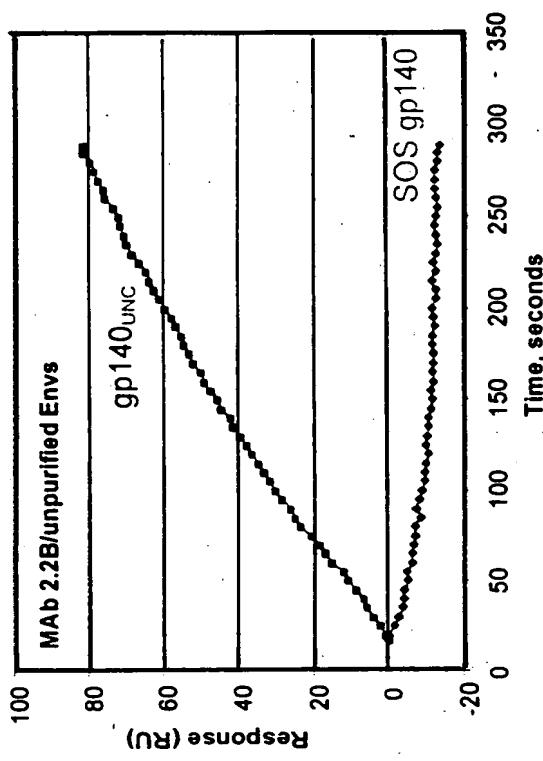
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gp140 →
gp120 →

FIGURE 21

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FIGURE 22B**FIGURE 22C****FIGURE 22D**

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FIGURE 22E

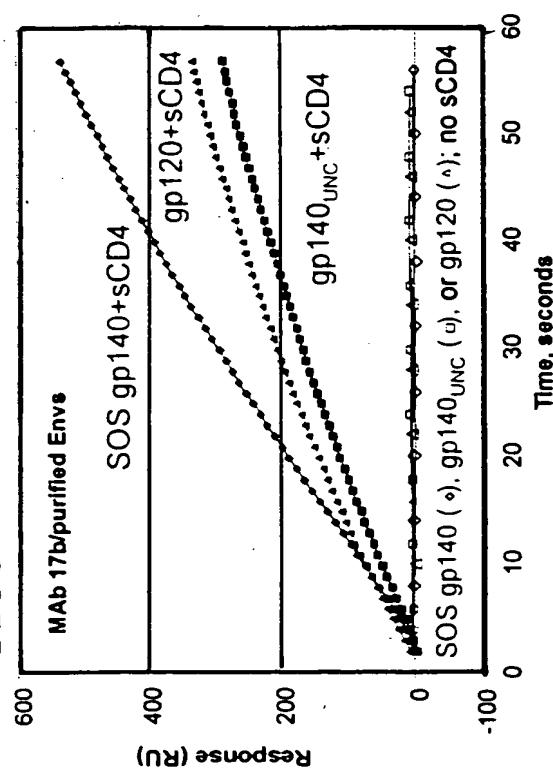


FIGURE 22G

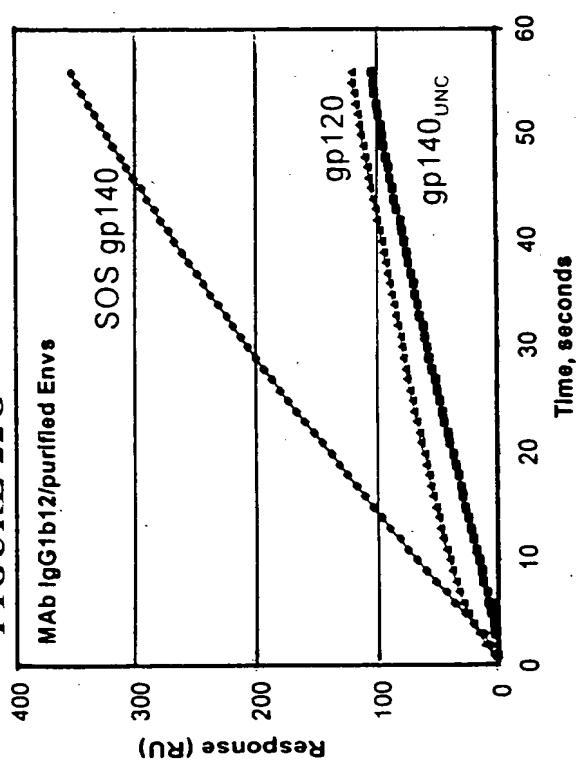


FIGURE 22F

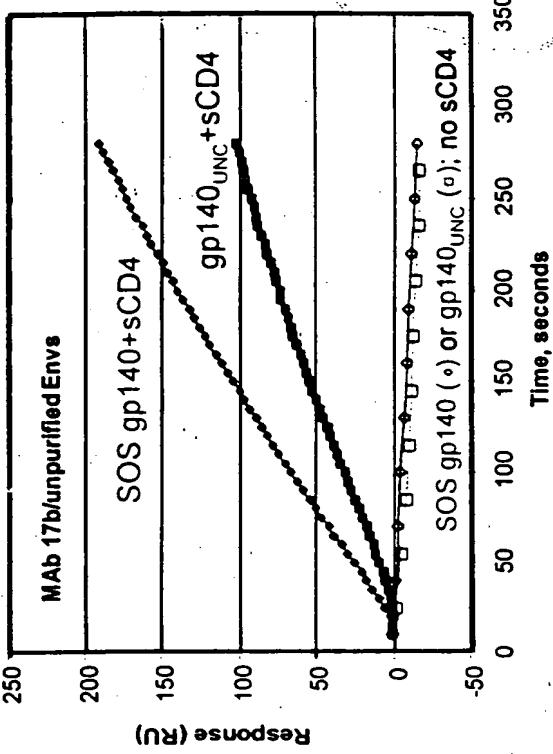
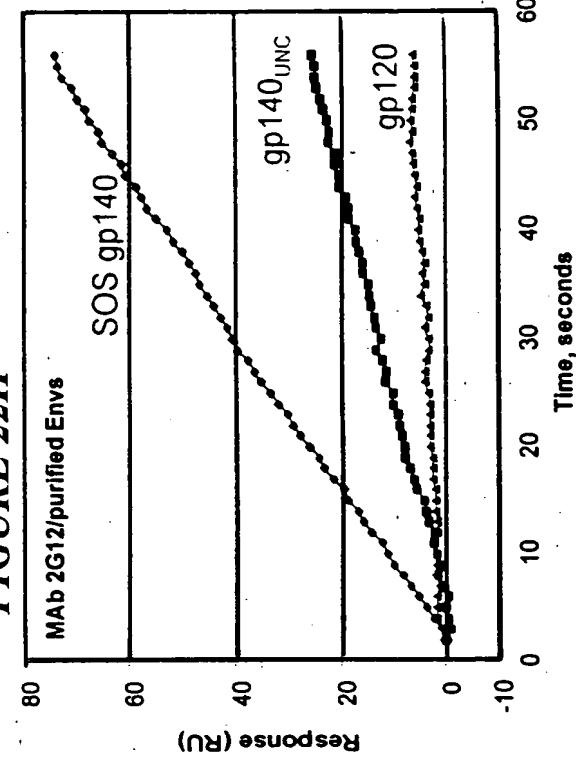
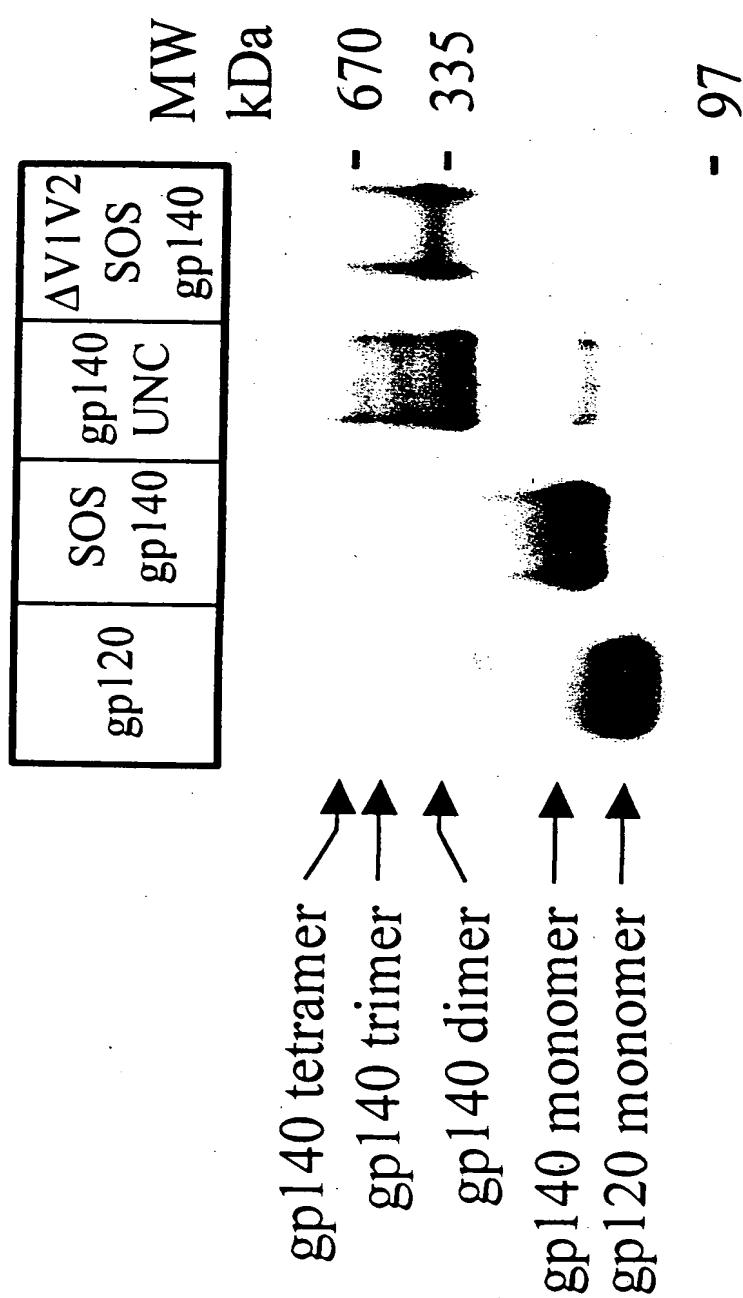


FIGURE 22H



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FIGURE 23A



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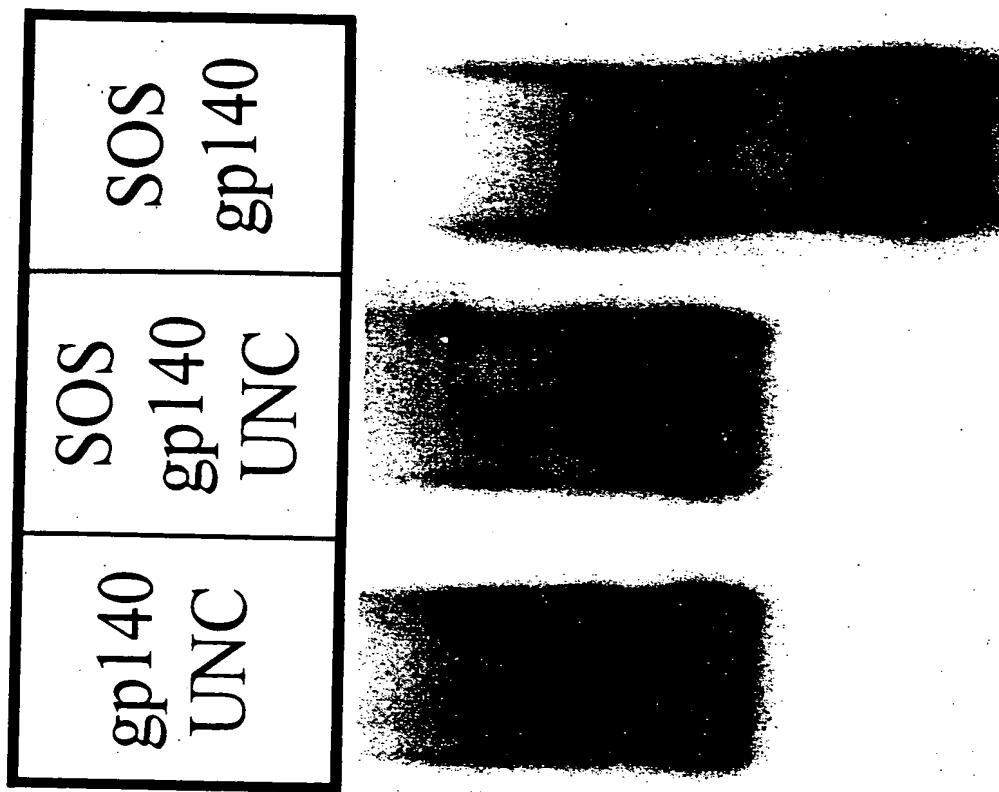
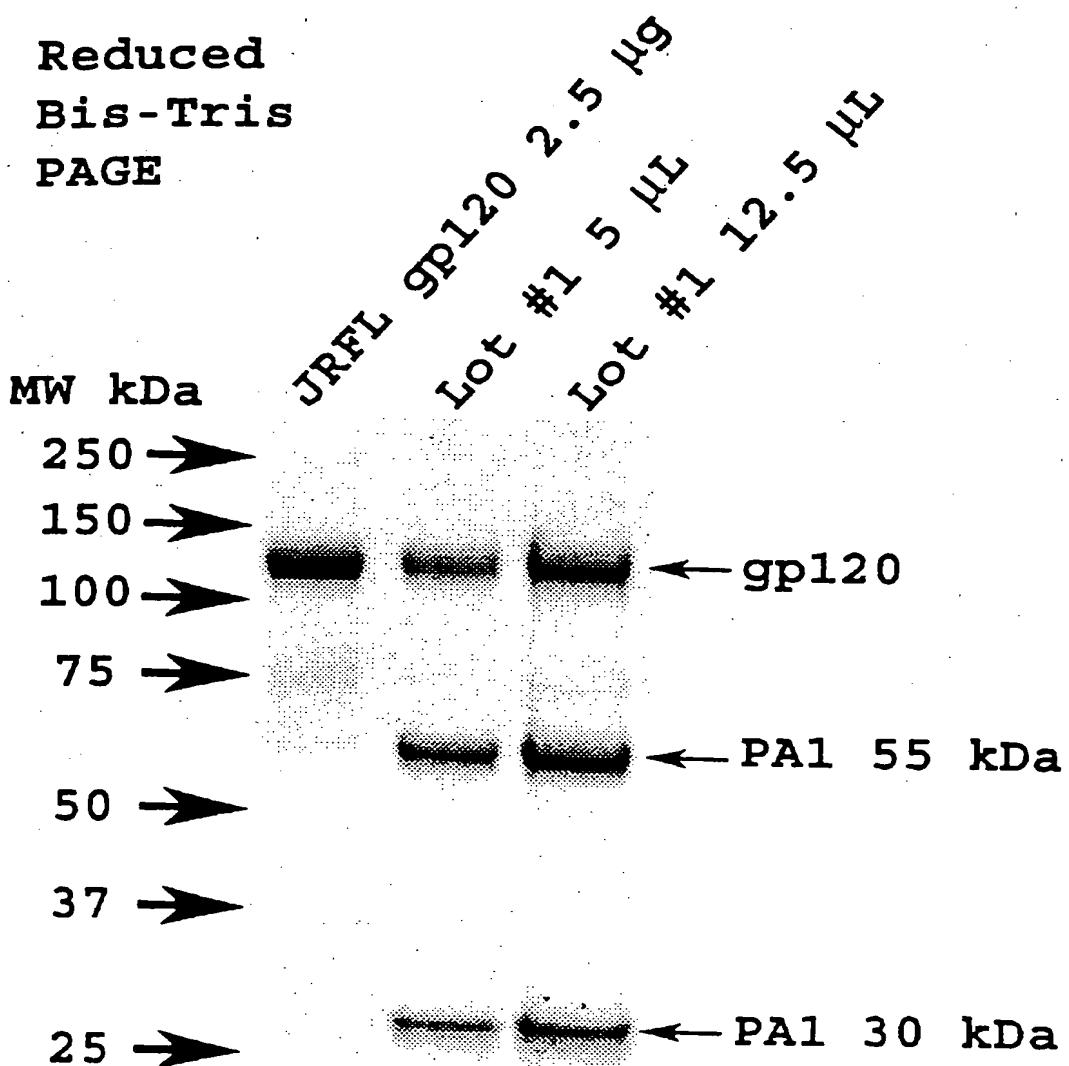
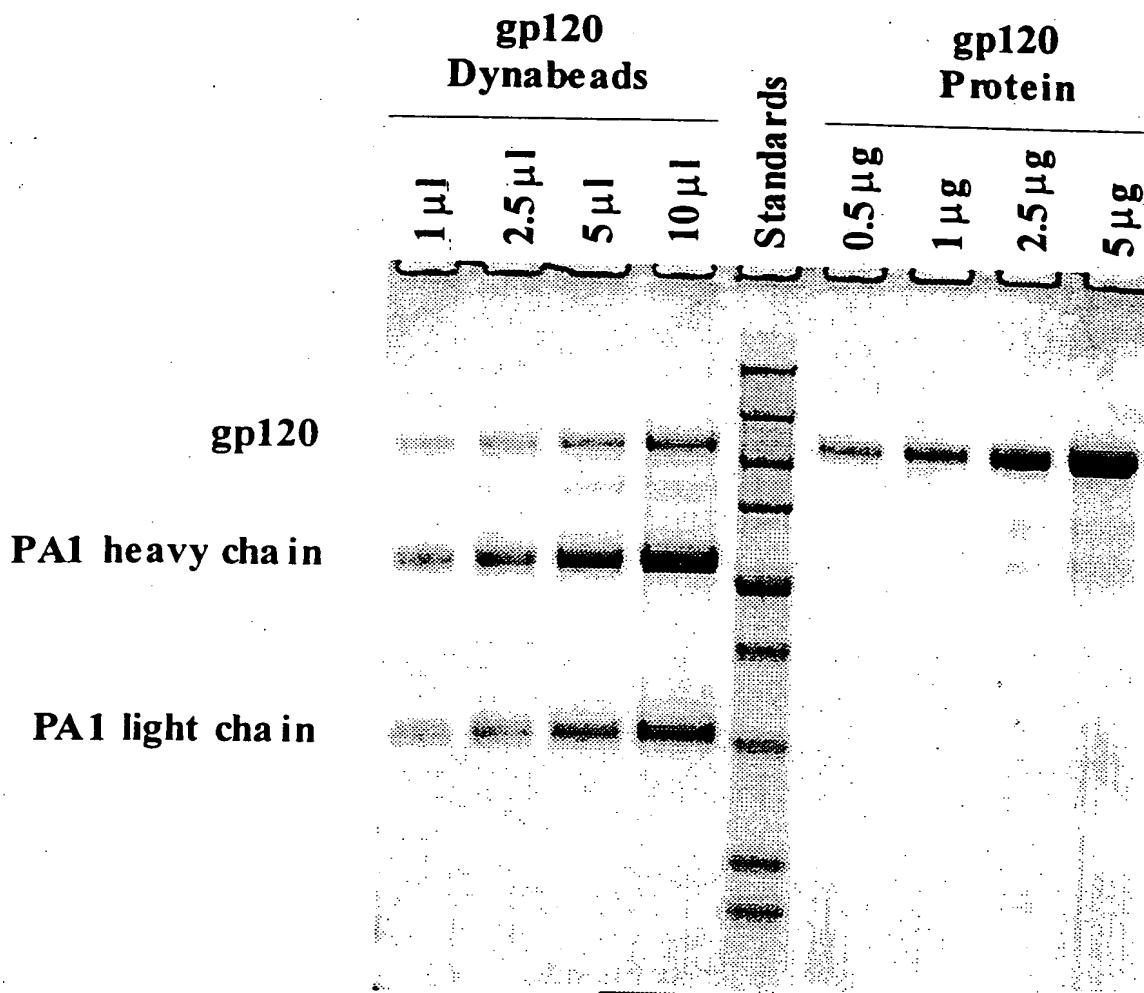


FIGURE 23B

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FIGURE 24

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FIGURE 25

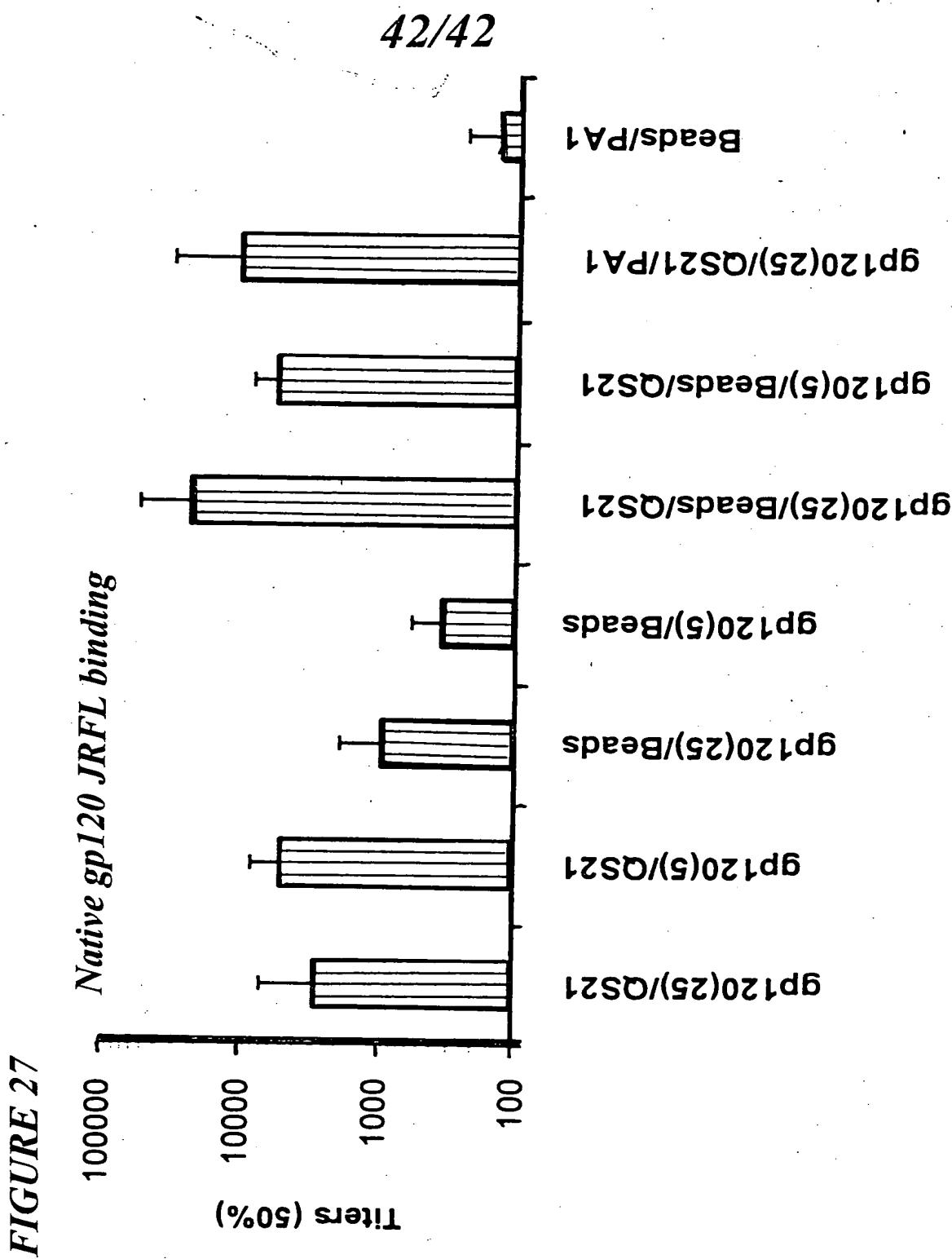


FIGURE 27